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GENERAL ZOOLOGY,
— or —
SYSTEMATIC NATURAL HISTORY

— by —
GEORGE SHAW, M.D. F.R.S. &c.

WITH PLATES

from the first Authorities and most select specimens

Engraved principally by

M^r HEATH.



VOL. III. Part I.

A M P H I B I A .

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GENERAL ZOOLOGY.

VOLUME III.—PART I.

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AMPHIBIA.

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 ERRATA.—VOL. III. PART I.

P. 153, l. 12, for *hyphochondiorum* read *hyphochondriorum*.

P. 222, l. 15, for *integerinea* read *integerrima*.

N.B. In vol. II. part II. at page 329, l. 10, for *feet* read *bands*. And in vol. I. part I. at page 108, l. 15, for *before* read *the fore*.

Directions for placing the Plates in vol. III. part I.

The Vignette represents a remarkable species of Lizard (perhaps a variety of *L. Seps*) in its natural size: colour dark brown above, yellowish beneath: feet all tetradactyle, with the two middle toes on each foot long, the others very short, all furnished with claws.

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** * The fourth and succeeding volumes of this work
will be published with all reasonable expedition.*

AMPHIBIA.

THE title *Amphibia* applied to this class of animals by Linnæus, may perhaps be considered as not absolutely unexceptionable; the power of living with equal facility both in land and water being not granted to all the animals which compose it. Yet, since it is certain that the major part are found to possess that faculty in a considerable degree, the title may be allowed to continue.

The Amphibia, from the peculiar structure of their organs, and the power which they possess of suspending respiration at pleasure, can not only support a change of element uninjured, but can also occasionally endure an abstinence which would infallibly prove fatal to the higher order of animals.

It has been a general doctrine among anatomists, that the hearts of the Amphibia were, in the technical phrase, unilocular, or furnished with only one ventricle or cavity: a doctrine maintained by many eminent anatomists, and, in general, assented to by the greatest physiologists, as

Boerhaave, Haller, &c. &c. and only occasionally called in question on viewing in some animals of this tribe a seemingly different structure. Thus the French Academicians of the seventeenth century pronounce the heart of an Indian land tortoise, which they examined, to have, in reality, three ventricles instead of one. Linnæus, in his *Systema Naturæ*, acquiesces in the general doctrine, and accordingly makes it a character of this class of animals. Among later physiologists, however, there are not wanting some who think it more correct to say, that the hearts of the Amphibia are in reality double, or furnished with two ventricles, with a free or immediate communication between them.

The lungs of the Amphibia differ widely in their appearance from those of other animals; consisting, in general, of a pair of large bladders or membranaceous receptacles, parted, in the different species, into more or fewer cancelli or subdivisions, among which are beautifully distributed the pulmonary blood-vessels, which bear but a small proportion to the vesicular part through which they ramify; whereas, in the lungs of the Mammalia, so great is the proportion of the blood-vessels, and so very small are the vesicles, or air-cells, that the lungs have a fleshy rather than a membranaceous appearance. In the Amphibia, therefore, the vesicular system may be said greatly to prevail over the vascular; and in the Mammalia or warm-blooded animals, the vascular system to prevail over the vesicular.

Many of the Amphibia are possessed of a high degree of reproductive power, and will be furnished with new feet, tails, &c. when those parts have by any accident been destroyed. Many are highly beautiful in their colours, as well as elegant in their forms; while others, on the contrary, are, in the common acceptance of the words, extremely deformed, and of unpleasing colours. Their bodies are sometimes defended by a hard, horny shield or covering; sometimes rather by a coriaceous integument; sometimes by scales, and sometimes have no particular defence or coating; the skin being merely marked by soft, pustular warts or protuberances, more or less visible in the different species.

The bones of the Amphibia, except in a very few instances, are of a more cartilaginous nature than in either the Mammalia or Birds: many species are destitute of ribs, while others have those parts very numerous: some are furnished with formidable teeth; others are toothless: some are fierce and predacious; other inoffensive. Few, except among the Serpent tribe, are of a poisonous nature; the general prejudice against them having arisen rather on account of their form, than from any real poisonous quality; but among the Serpents we meet with some species possessed of the most dreadful poison, as well as with the power of applying it with fatal force to the animals which they attack. The number of poisonous Serpents is, however, not so great as was formerly imagined; perhaps not more than a sixth

part of the whole number of known species being of that character.

Among no animals do we meet with beings of a more singular form than in the Amphibia; some of which present appearances so unusual, so grotesque, and so formidable, that even the imagination of the poet or painter can hardly be supposed to exceed the realities of Nature.

The Amphibia in general are extremely tenacious of life, and will continue to move, and exert many of their animal functions, even when deprived of the head itself. The experiments which have been occasionally made on these subjects, can hardly be recited without horror. The natural life of some of the Amphibia, more particularly of the Tortoise tribe, is extremely long; and even to the smaller tribes of Frogs and Lizards a considerable space seems allotted. The same is also highly probable with respect to the Serpent tribe.

By far the major part of the Amphibia are oviparous, some excluding eggs covered with a hard or calcareous shell, like those of birds; others such as are covered only with a tough skin, resembling parchment; and in many they are perfectly gelatinous, without any kind of external covering, as in the spawn of the common Frog. Some few are viviparous; the eggs first hatching internally, and the young being afterwards excluded in their perfect form, as in the Viper, &c. &c. In cold and temperate climates, most of the Amphibia pass the winter in a torpid state; and that sometimes in a degree of cold which would seem

but ill calculated for the preservation of animal life. The common large water-newt in particular is said to have been occasionally found completely imbedded in large masses of ice, in which it must have remained inclosed for a very considerable period; and yet, on the dissolution of the ice, has been restored to life.

The Amphibia may be divided into four distributions, viz. *Testudines*, *Ranæ*, *Lacertæ**, and *Serpentes*; or *Tortoises*, *Frogs*, *Lizards*, and *Serpents*.

The animals belonging to the three former of these divisions constitute the order entitled REPTILIA, containing the *Amphibia Pedata*, or *Footed Amphibia*. The last division, or that of *Serpents*, constitutes the order SERPENTES, containing the *Amphibia Apoda*, or *Footless Amphibia*.

* The genus *Draco* is here supposed, in a general view, to be included among the Lizards, though in the strictness of systematic arrangement, it must be separated from them.

AMPHIBIA.

ORDER

REPTILIA.

TESTUDO. TORTOISE.

Generic Character.

Corpus caudatum, lorica ossea aut coriacea superne et inferne, vel squamis superne obtectum.

Oris mandibula superiore inferiorem pyxidum instar claudens.

Body defended by a bony covering coated by a horny, scaly, or coriaceous integument.

Mouth without distinct or proper teeth *? the upper mandible closing over the lower.

IN no branch of Natural History have more errors prevailed than in the attempt to discriminate with precision the several species of Tortoises; the general similarity being very great, and the individuals occasionally varying much in size, colours,

* What are called teeth in the generality of Tortoises are no other than the serratures of the mandibles.

&c. according to the different periods of their growth.

The specific characters given by Linnæus, in the *Systema Naturæ*, are proved, from later observations, to be entirely insufficient for the purpose of accurate distinction; and the same must be said of those in the Gmelinian edition of that work. The descriptions of the Count de Ceppe, in his *History of Oviparous Quadrupeds*, have by no means tended to dispel the general obscurity, but have in some instances rather increased it; and throughout almost all authors will be found to prevail a confusion of synonyms and references. Mr. Schneider, Mr. Schoepff, and some others, have lately endeavoured to elucidate this difficult genus, and have contributed to a somewhat clearer knowledge of the species and varieties. One observation of Mr. Schoepffs is of peculiar importance, and may save zoological students a considerable degree of unnecessary trouble, viz. that the apparent number of claws or projecting extremities on the feet of the marine tortoises or turtles, appears to be no certain criterion of the species; but, on the contrary, is found to vary in such a manner as to contradict the Linnæan specific characters. Thus, on collating a number of specimens of the *T. Mydas*, or common green Turtle, some will be found with only a single claw on each of the feet; others, with two, or even three; and others with two on the fore feet, and one on the hind. It also appears, from the observations of Cetti and others, that a similar





COMMON TORTOISE.

variation occasionally takes place in some of the land tortoises, and particularly in the *T. Græca*, or common tortoise, the fore feet of which in some individuals have four, and in others five claws. The animals are, therefore, best distinguished by the shape, pattern, and colours of the shell, the form of the head, &c.

Land and fresh-water Tortoises.

COMMON TORTOISE.

Testudo Græca. T. testa hemisphærica nigro flavoque varia, scutellis disci subconvexis, margine laterali obtuso, postice gibbo.

Tortoise with hemispheric black and yellow shell, gibbose behind; the pieces composing the disk convex, and the sides obtuse.

Testudo Græca. T. testa hemisphærica, scutellis disci subconvexis, flavis, nigro cinctis, margine laterali obtuso postice gibbo. Schoepf. Hist. Test. p. 38. t. 8, 9.

Testudo Græca. T. pedibus subdigitatis, testa postice gibba, margine laterali obtusissimo, scutellis planiusculis. Lin. Syst. Nat. p. 352.

Testudo terrestris vulgaris. Raj. Quadr. 243.

The common Land Tortoise.

THIS animal is generally considered as the most familiarly known of all the European species, and is emphatically called by the title of the Common Land Tortoise. It might, therefore, as Mr. Schoepff has well observed, be expected, that its accurate description should long ago have been

given, and its specific characters so exactly ascertained as to leave no doubt of the animal intended. This, however, is so far from being the case, that it may be questioned whether any of the genus has been less distinctly described.

The figure given by the Count de Ceppe, in his History of Oviparous Quadrupeds, as well as its description, at p. 144 of that work, relates to a very different species; the author having confounded widely distinct animals. This is the more unfortunate, as the Count particularly observes, that it is known to all the world, and that there is scarcely any person who has not seen it: that it has been in all times the type of tardity; and that it has furnished in every age a field of speculation for philosophers, images for poets, and proverbs for the people. All this is indeed true, but not of the animal he describes and figures.

The common or Greek Tortoise is supposed to be a native of almost all the countries bordering on the Mediterranean Sea; and is thought to be more frequent in Greece than in other regions. It is found in the scattered European islands of the Archipelago, and in Corsica and Sardinia. It occurs likewise in many parts of Africa. In Greece, according to Forskal, "it forms an article of food; and the inhabitants often swallow the blood recent, and eat the eggs boiled, which are about the size of those of a pigeon, four or five in number, and of a white colour. In September the animal hides itself under ground, and

again emerges in February* ; laying its eggs in June, in a small hole, which it scratches in some sunny spot, out of which after the first rains of September, the young are hatched, which are about the size of a walnut. The males of this species are said to fight often, butting at each other with such force as to be heard at a considerable distance."

The general length of the shell of this species is from six to eight inches, which latter measure it rarely exceeds: the weight of the full-grown animal is about forty-eight ounces. The shell is of an oval form, extremely convex on the upper part, and composed, as in most others, of thirteen middle pieces, and about twenty-five marginal ones: the middle pieces, or those constituting the disk of the shield, are mostly of an oblong square form, and of a blackish or dark brown colour, varied by a broad yellow or citron band running along one side of each, and continued about half way along the upper part: there is also an oblong patch of a similar colour, running down the lower part or side of each; and on the top or centre of each piece is an obscurely square or oblong space, rather more depressed than the rest, and marked, as in many other tortoise-shells, with roughish spots or granules: several furrows, more or less distinct

* When kept in gardens in Italy and Germany, it is observed to latibulize in October, and to reappear in April. In England it retires about the end of October, and reappears about the middle of April; but these periods seem to differ in all countries according to the temperature of the weather, &c.

in different individuals, appear traced round the sides of each piece, becoming gradually less distinct as they approach the upper part or space just mentioned. The colours of the shell are more or less bright in the different specimens, and are subject, as well as even the shape of the pieces themselves, to some occasional variations; and when very old, the shell becomes much smoother than in the younger animals, the sulci or furrows, as well as the areolæ or spaces on the top of each scutellum or piece, being almost obliterated. The under or belly part of the shell is of a citron or pale yellow colour, with a broad blackish or deep-brown zone down each side, leaving the middle part plain. The head is rather small than large; the eye small and black; the mouth not extending beyond the eyes; the upper part of the head covered with somewhat irregular, tough scales, and the neck with smaller granulations, so as to be flexible at the pleasure of the animal. The legs are short, and the feet moderately broad, covered with strong ovate scales, and commonly furnished with four moderately stout claws on each; but this is a circumstance which cannot be allowed to constitute a part of the specific character, since in different individuals, either from age, or other circumstances, these parts are found to vary in number, there being sometimes five claws instead of four on the fore feet. The tail is about the same length with the legs, or rather shorter, and is covered with small scales, and terminates in a naked horny pointed tip or process.

This animal lives to a most extraordinary age;

several well attested examples being adduced of its having considerably exceeded the period of a century. One of the most remarkable instances is that of a tortoise introduced into the archiepiscopal garden at Lambeth, in the time of Archbishop Laud, and as near as can be collected from its history, about the year 1633, which continued to live there till the year 1753, when it was supposed to have perished rather from accidental neglect on the part of the gardener, than from the mere effect of age. This Tortoise has had the honour of being commemorated by Derham*, and many other writers, and its shell is preserved in the library of the palace at Lambeth †.

The general manners of the Tortoise, in a state of domestication in this country, are very agreeably detailed by Mr. White, in his History of Selbourn. "A Land Tortoise," says Mr. White, "which has been kept thirty years in a little walled court, retires under ground about the middle of November, and comes forth again about

* In a copy of the work entitled *Memoirs for the Natural History of animals*, from the French Academy, and which was once the property of Derham, the following MS. note occurs :

"I imagine Land-Tortoises, when arrived at a certain pitch, cease growing. For that I saw, Aug. 11, 1712, in my Lord Archbishop of Canterbury's Garden, which hath been there ever since Archbishop Juxon's time, and is accounted to be above 60 years old, was of the same size I have seen others of, of larger size, and much younger."

† This memorable Tortoise appears to have exceeded the usual dimensions of its species ; the shell measuring ten inches in length, and six and half in breadth.

the middle of April. When it first appears in the spring, it discovers very little inclination for food, but in the height of summer grows voracious; and then, as the summer declines, its appetite declines; so that for the last weeks in autumn it hardly eats at all. Milky plants, such as lettuces, dandelions, sowthistles, &c. are its principal food. On the first of November, 1771, I remarked that the Tortoise began to dig the ground, in order to form its hybernaculum, which it had fixed on just beside a great tuft of *Hepaticas*. It scrapes out the ground with its fore feet, and throws it up over its back with its hind, but the motion of its legs is ridiculously slow, little exceeding the hour hand of a clock. Nothing can be more assiduous than this creature, night and day, in scooping the earth, and forcing its great body into the cavity; but as the noons of that season proved unusually warm and sunny, it was continually interrupted, and called forth by the heat in the middle of the day, and though I continued there till the thirteenth of November, yet the work remained unfinished. Harsher weather, and frosty mornings, would have quickened its operations. No part of its behaviour ever struck me more than the extreme timidity it always expresses with regard to rain; for though it has a shell that would secure it against the wheel of a loaded cart, yet does it discover as much solicitude about rain as a lady dressed in all her best attire, shuffling away on the first sprinklings, and running its head up in a corner. If attended to, it becomes

an excellent weather-glass, for as sure as it walks elate, and, as it were on tip-toe, feeding with great earnestness, in a morning, so sure will it rain before night. It is totally a diurnal animal, and never pretends to stir after it becomes dark."

"The Tortoise," adds Mr. W. "like other reptiles, has an arbitrary stomach, as well as lungs, and can refrain from eating, as well as breathing, for a great part of the year. I was much taken with its sagacity, in discerning those that do it kind offices; for as soon as the good old lady comes in sight who has waited on it for more than thirty years, it hobbles towards its benefactress with awkward alacrity; but remains inattentive to strangers. Thus, not only "*the Ox knoweth his owner, and the Ass his master's crib*," but the most abject and torpid of beings distinguishes the hand that feeds it, and is touched with the feelings of gratitude. This creature not only goes under the earth from the middle of November to the middle of April, but sleeps great part of the summer; for it goes to bed in the longest days at four in the afternoon, and often does not stir in the morning till late. Besides, it retires to rest for every shower, and does not move at all in wet days. When one reflects on the state of this strange being, it is a matter of wonder that Providence should bestow such a seeming waste of longevity on a reptile that appears to relish it so little as to squander away more than two thirds of its existence in a joyless stupor, and be lost to all sensation for months together in the profoundest of all slumbers! Though he loves warm weather, he avoids the hot sun; be-

cause his thick shell, when once heated, would, as the poet says of solid armour, '*scald with safety.*' He therefore spends the more sultry hours under the umbrella of a large cabbage-leaf, or amidst the waving forests of an asparagus bed. But as he avoids heat in the summer, so in the decline of the year, he improves the faint autumnal beams, by getting within the reflection of a fruit-tree wall; and though he has never read that planes inclining to the horizon receive a greater share of warmth, he inclines his shell by tilting it against the wall, to collect and admit every feeble ray."

The Tortoise seems more tenacious of the vital principle than any other of the Amphibia. Redi informs us, that in making some experiments on vital motion, he, in the beginning of November, took a land tortoise, and made a large opening in its skull, and drew out all the brain, washing the cavity, so as to leave not the smallest part remaining, and then, leaving the hole open, set the animal at liberty. Notwithstanding this treatment, the Tortoise marched away, without seeming to have received the smallest injury: it however closed its eyes, and never opened them afterwards. In a short space the hole of the skull was seen to close, and in about three days there was a complete skin covering the wound; and in this manner the animal lived, without the brain, for six months, walking about, and moving its limbs as before. Redi also cut off the head of a Tortoise, which lived twenty-three days afterwards; and the head itself continued to snap the jaws for more than a quarter of an hour after its separation from the

body. He repeated the experiment of taking out the brain upon several other Tortoises, both of land and fresh water; all of which lived for a considerable space without the brain. He observed also, that having cut off the heads of some, and opening the bodies twelve days afterwards, the motion of the heart was still perceptible; so slowly is the vital principle discharged from these inactive animals.

The species of *Testudo* most liable to be confounded with the *Græca* seem to be the *T. pusilla* of Linnæus, the *tabulata* of Schoepf, the *sulcata* of Millar, and the *marginata* of Schoepf. Linnæus himself quotes no figure for his *T. Græca*, which has greatly tended to increase the general uncertainty.

MARGINATED TORTOISE.

Testudo Marginata. T. testa oblonga fusca gibba flavo variata, postice explanato-depressa.

Tortoise with blackish-brown, oblong gibbose shell variegated with yellow, widened and depressed on the hind part.

Testudo Graja. T. testa postice explanato-depressa, lateribus obtusa, scutellis subgibbis, glabris; marginali anteriori lineari. Hermann.

Testudo marginata. T. testa oblonga gibba; lateribus retusa, margine postico explanato-depressa, scutellis 24. Schoepf. Test. p. 52. t. 11. and 12. f. 1.

THIS, according to Mr. Schoepf, is the species erroneously figured and described in the Count de Ceppe's work as the *Testudo Græca*, and consi-

dered as the most common European species. The Count de Cepede's description is as follows: This Tortoise, which is described from the life, is almost fourteen inches long, and ten broad, when measured according to the curvature of the shell: the head is an inch and ten lines long, an inch and two lines broad, and one inch deep; it is flat and triangular above: the eyes furnished with a nictitating membrane; the lower eyelid alone being moveable: the mandibles strong, crenulated, and beset internally with asperities, which are sometimes mistaken for teeth: the apertures of the ears are covered by the common skin: the tail is very short, being only two inches long: the fore legs three inches and six lines long; the hind feet two inches and six lines: the skin is grainy, and covered with unequal, hard scales, of a brown colour, and covering the head, legs, and tail; some of these scales on the ends of the feet are large and hard, and of a pointed form, so that they might be confounded, at first sight, with the claws: the feet are thick, and so covered, as it were, by the investing membrane, that the toes can only be distinguished by the claws which terminate them. The Count adds, that the disk of the shell consists of thirteen pieces, striated on their margins, and the border of twenty-four pieces; all of which, and especially the hinder ones, are much larger in proportion than in other tortoises, and from their position cause the circumference of the upper shell to appear denticulated: it is extremely convex, being more than four inches

deep; in consequence of which, the animal, when placed on its back, can regain its former situation. The Count has not particularized its native country, but considers it as a general inhabitant of Greece, Africa, India, the islands of Amboina, Ceylon, and Japan; and even of America; thus confounding, according to Mr. Schoepf, several different species from all quarters of the globe under one general name*.

The general colour of this animal is a dark or blackish bay; the middle or convex part of the pieces composing the disk, being more or less dashed or varied, in an irregular manner, with yellow: the marginal pieces are also variegated with the same colour, which predominates chiefly on the hindmost or widest divisions, which are pretty distinctly striated or furrowed, and from their peculiar width or dilatation† form the chief part of the specific character. The under shell is of a pale yellow colour, each division being marked on its upper commissure by a transverse blackish band, running into a pair of pointed or subtriangular processes, extending nearly to the next or inferior division. The outline of the shell, if viewed from above, will be found to be much longer in proportion than that of the Testudo

* “Generos. de la Cepede, sub T. Græcæ nomine, plures et diversissimas terrestres testudines, ex omnibus fere mundi plagis, in unam confudit speciem.”—*Schoepf. p. 47.*

† The shell of the T. Græca is also somewhat dilated on each side at the hind part, especially in the older specimens; but not in so great a degree as in the present species.

Græca, accompanied by a slight contraction or sinking in on each side.

This species appears evidently to be the same with that figured in the work of Johnston, under the title of *Schildt Krötte*, tab. 80, and the figure is by no means a very bad one, though the markings of the shell are somewhat too strongly expressed.

The true native country of the animal seems not very distinctly known. Mr. Schoepf is inclined to think it an American species.

I cannot but add, that the Count de Ceppe seems to be not the only author who has confounded it with the *T. Græca*; and it is probable that it has frequently been mistaken for that animal.

GEOMETRICAL TORTOISE.

Testudo Geometrica. *T. testa ovata nigra, scutellis elevatis, flavo stellatim radiatis.*

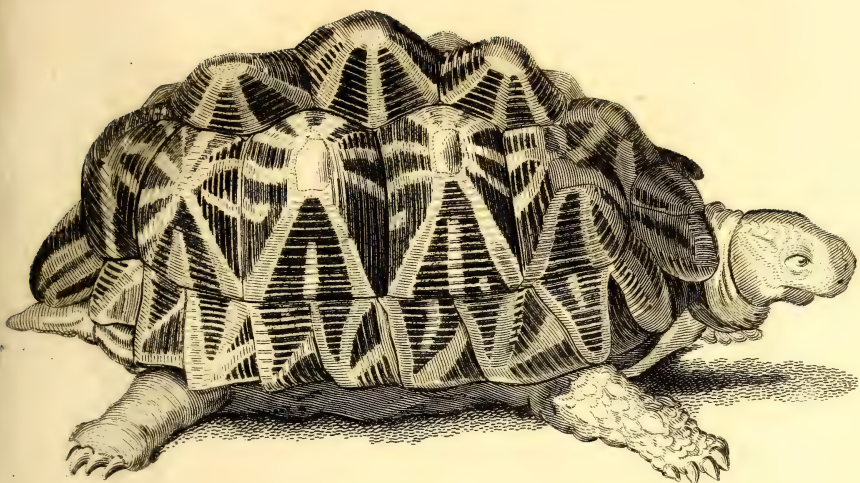
Tortoise with ovate black shell and elevated scutella radiated with yellow.

Testudo geometrica. *T. pedibus posticis palmatis, testæ scutellis elevatis truncatis. Lin. Syst. Nat. p. 353.*

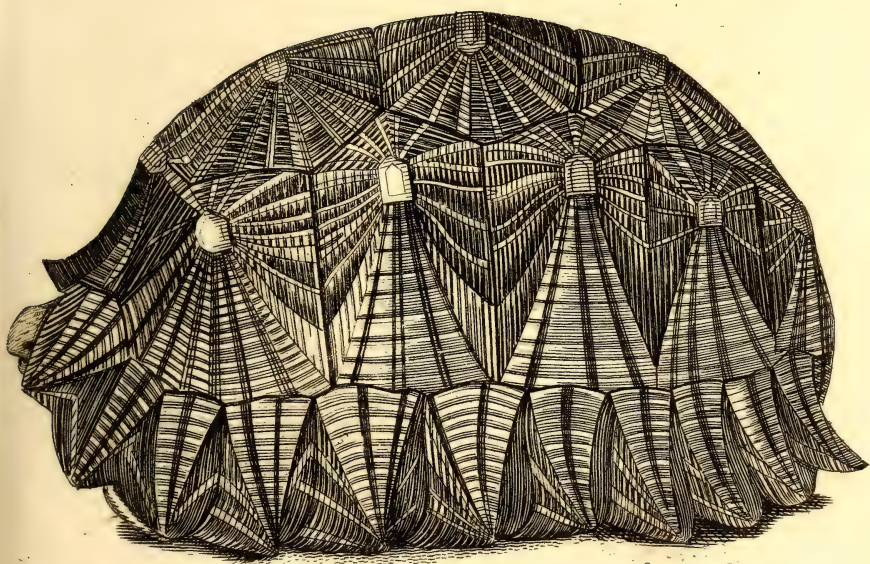
T. scutellis testæ ovatæ omnibus elevatis superne planis, striis flavis velut e centro stellatim concurrentibus. Lin. Syst. Nat. Gmel. p. 1044.

Testudo testellata minor. *Raj. Quadr. 359.*

FROM its strong and well-contrasted colours and symmetrical regularity of pattern, the present species is more readily distinguishable at first

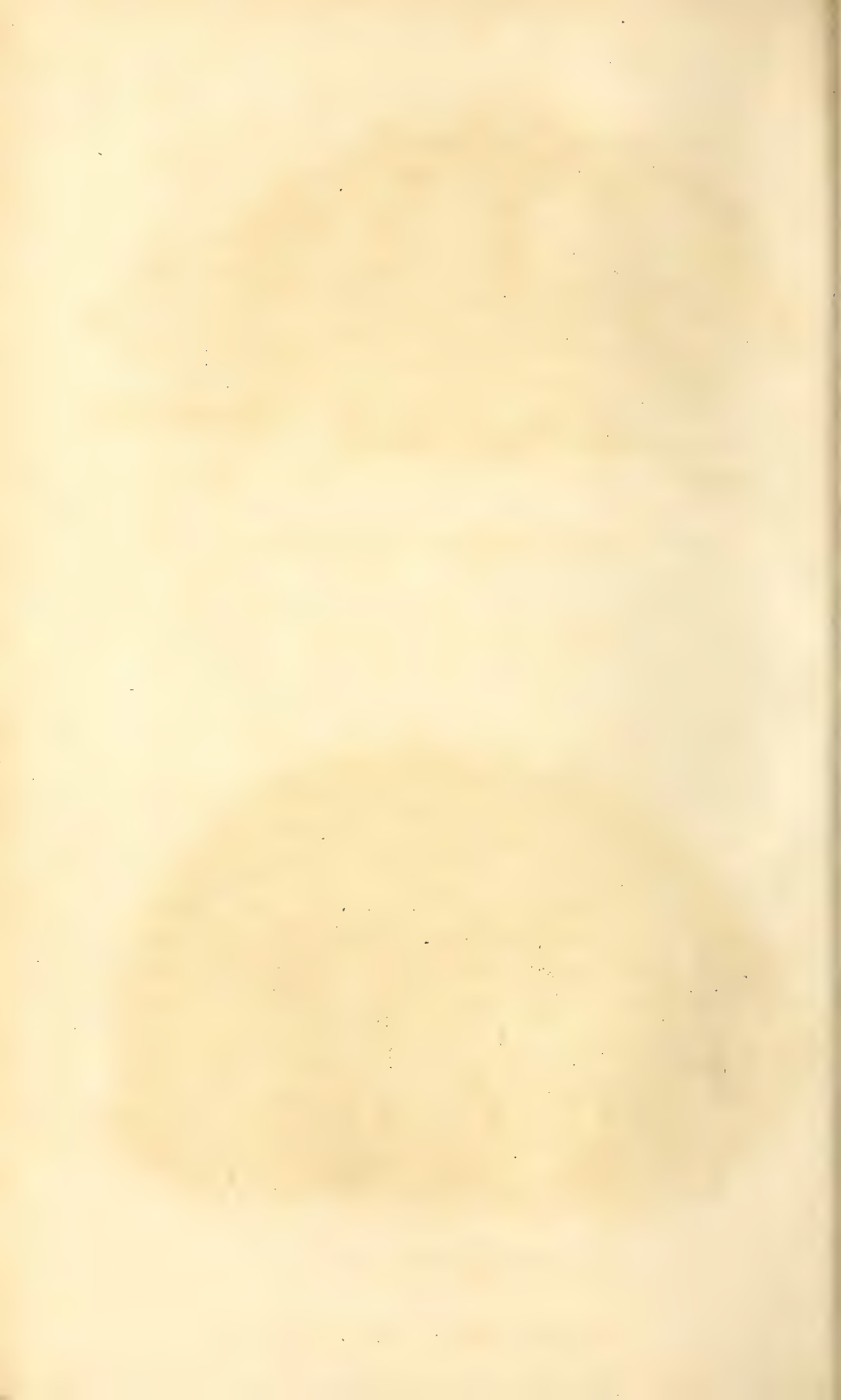


GEOMETRICAL TORTOISE.



Coarct. sculp.

RADIATED TORTOISE.



view, than most others of this perplexing tribe. The pieces of which the disk of the shell consists are very prominent, striated, or furrowed pretty distinctly with numerous lines on their sides, and terminated above by a yellowish, flat, square, or rather hexagonal roughened space or centre, from which proceed, in a radiated direction, several well-defined yellow streaks towards the edge; thus constituting a beautiful kind of geometrical appearance on the black ground-colour on which they are disposed: the marginal pieces, which are commonly twenty-four, sometimes twenty-six, in number, are also streaked with yellow, but in a somewhat different style, as may be seen by inspecting the annexed engraving. In the brightness of its colours, like all other Tortoises, it occasionally varies; but the beautiful regularity of its pattern is scarcely ever obliterated, even in the oldest specimens. In the number of pieces composing the disk it is sometimes known to vary; having occasionally fourteen instead of thirteen, as is the case in a specimen preserved in the British Museum, and represented on pl. 306 of the Naturalist's Miscellany.

The native country of this beautiful Tortoise is perhaps not truly ascertained; though the shell is more frequently seen in Europe than that of almost any other kind. It is said, however, to inhabit Asia and Africa, and even to be found in America. According to Mr. Thunberg it is particularly common in shrubby places about the Cape of Good Hope. It is said to lay about twelve or

fifteen eggs at a time. The Count de Cepede supposes this species to be the Terrapin of Dampier, which that navigator represents as very beautifully variegated, and as delighting in moist and marshy places; adding, that its flesh is esteemed as a food, and that it is found in plenty on the coasts of the Pine islands, between the continent of America and Cuba: they are found in the forests, where they are easily taken: the hunters mark them on the shield, and let them wander about the woods; being sure to find them again at no great distance, every one easily recognizing his own property, and afterwards carrying them to Cuba.



RADIATED TORTOISE.

Testudo Radiata. *T. testa ovata nigra, scutellis planiusculis flavo stellatim radiatis.*

Tortoise with ovate black shell and flattish scutella radiated with yellow.

Testudo tessellata major. Great chequered Tortoise-shell.
Grew. mus. reg. soc. p. 36.

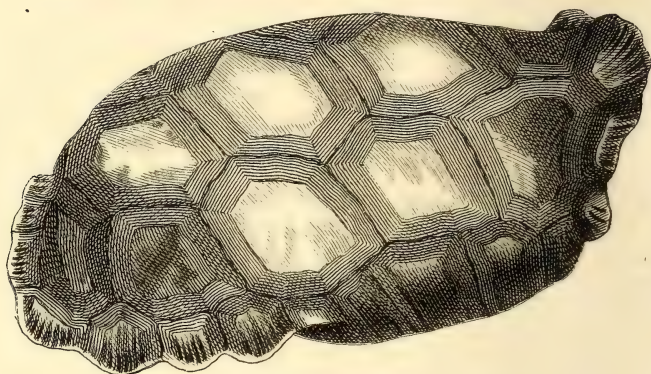
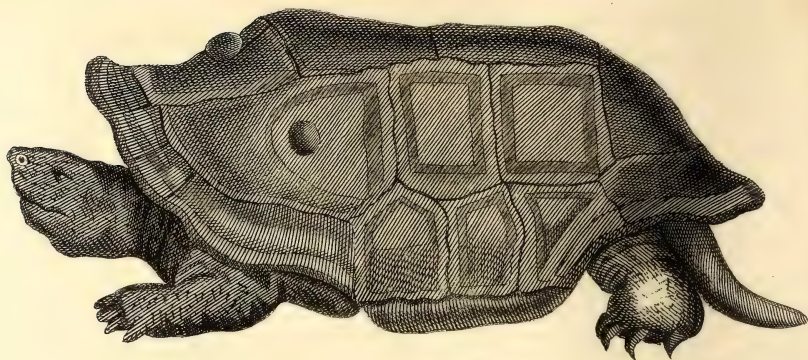
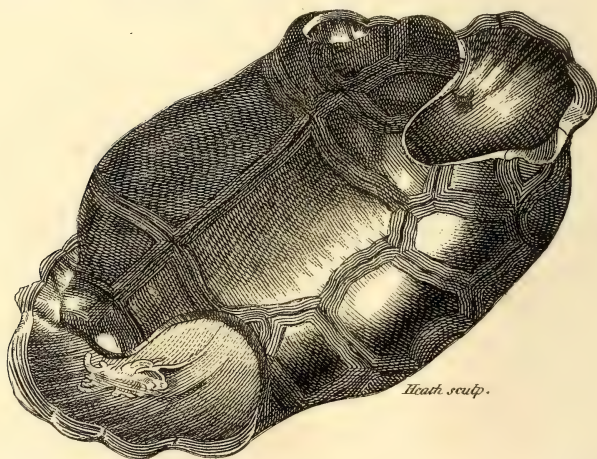
FROM a general resemblance in the pattern of the shell, and a similarity in colours, it appears that this animal has been considered either as the same species, or at most as a variety of the *T. geometrica*. It is impossible, however, to view with any attention the two shells without allowing them to be perfectly distinct. That of the species at present under consideration often measures a

foot or more in length, whereas the former seldom arrives at that size: it is also nearly smooth or even in its outline, whereas that of the *T. geometrica* is remarkably tuberculated; the pieces of which it consists rising very much towards their centres: the pattern in the present shell is also more elaborately disposed, and the streaks or radiations more numerous and delicate in proportion; all which distinctions will appear at once from an inspection of the annexed figures, and will be more impressed on the mind of the inquirer than by any possible verbal description. The native country of this species is said by Grew, who has well described it in his *Musæum Regalis Societatis*, to be Madagascar; but it should seem to be also a native of Jamaica; since the *Hicatee* Tortoise, mentioned in Brown's History of that island, appears to agree pretty well with its characters and size, and will by no means accord with those of the *T. geometrica*, to which it is generally applied by authors. So accurately has Grew detailed the figure and pattern of the shell, that it would be injurious to omit his description:

“ It was sent from Madagascar. I find the animal no where described or figured. It is above half oval; being of all that I ever saw the most concave; a foot long, eight inches over, and almost six inches high. The convex is curiously wrought with black and whitish pieces, alternately wedged in, one against another, and notched, as it were, with transverse incisions. Those near the margin and on the sides are composed into

several pyramidal areas or great triangles, whose bases are about two inches broad. On the back into sexangular ones, each of them convex. On the sides and quite behind the shell is carried somewhat inward. Before and hinderly the edges are toothed, and bended outward and upward. The inward edges are covered with shelly plates above an inch and half broad. The concave is composed of six and forty bones. Along the middle of the back are twelve, all, except the foremost and the four last, almost square. Next to these are eight on each side, like so many contiguous ribs; together with two lesser square bones before: next to these, eight more, as it were, under-ribs, on each side. To the twelve middlemost bones the ribs are joined by an alternate commissure, so as one of them answers to the halves of two ribs, and vice versa. To these the under-ribs, in a wonderful manner, viz. by a branched suture or indenture. For the great teeth of the under-ribs being first inserted into those of the upper-ribs, the indenture is afterwards repeated by lesser teeth, out of the sides of the great ones. Besides the most elegant ordering of the work in the convex, there are three things chiefly observable, which serve for the greater strength of the shell. That is to say, the convexity of the several areas on the back, the branched sutures, and the alternate commissures of the bones; answerable to the rule of Nature in a human skull; and of Art, in laying of stones in buildings, and in covering of broader vaults,

INDIAN TORTOISE.

INDIAN TORTOISE. *var.*

not with one arch, but several lesser ones, for the greater strength."

It should be farther observed, that the colour of this shell varies in different specimens, the radiations being sometimes yellow, and sometimes very pale or whitish, as in Grew's description.

The under part of the shell was wanting in the specimen described by Grew; but in the Leverian Museum are specimens of this part also, which differs widely in the distribution of its markings from that of the preceding species; the ground-colour being blackish-brown, marked by large well-defined yellow divisions or transverse spaces, of which that in the middle constitutes a complete rhomb or horizontal lozenge, bounded above and below by two much narrower ones, while the pieces composing each extremity are also of the same colour, and of a subtriangular form. In some specimens a few additional yellow rays are interspersed.



INDIAN TORTOISE.

Testudo Indica. *T. testa supra collum reflexa, scutellis tribus primoribus tuberosis.* Lin. Syst. Nat. Gmel. p. 145. Schneid. Schildkr. p. 355.

Tortoise with brown shell, reflected above the neck, and marked with a tubercle on the three upper scutella.

Great Indian Tortoise. Mem. Nat. Hist. anim. Fr. Acad. p. 252. pl. *ibid.*

THIS very large terrestrial species, which is omitted by Linnæus in the twelfth edition of the

Systema Naturæ, was first described by Perrault in the History of Animals published by the Royal Academy of France. The specimen was taken on the coast of Coromandel, and measured four feet and a half from the tip of the nose to the tail; and its height or convexity was fourteen inches: the shell itself was three feet long and two broad, and, like every other part of the animal, was of a dull brown colour: the shield consisted of large and dissimilar pieces, and the edge on the fore-part was rather reflected, for the easier motion of the animal's head: the three anterior portions of the shield had each a round knob or tubercle on the middle, which seems the most remarkable character of the species; each tubercle was about half an inch wide, and from three to four lines high: the head, feet, and neck, were covered with a wrinkled and granulated skin; the head was seven inches long; the mandibles serrated, and furnished with an additional internal row of denticulations: the fore legs were nine inches long: the fore feet undivided, thick, and armed with five blunt claws: the hind legs were eleven inches long; the feet tetradactylous and armed with four claws: the tail six inches thick at the base, fourteen inches long, and terminated by a horny curved process. The figure given in the Memoirs of the Academy seems rather negligently executed. Mr. Cèpede appears to confound this very large species with the *T. Græca*.

VAR. ?

MR. VOSMAER has described and figured the shell of a large Land Tortoise from the Cape of Good Hope, which seems so much allied to the preceding, that it can hardly be considered as any other than a variety. Its length was about two feet eight inches: its width one foot six inches: its height one foot: the disk had thirteen, and the margin twenty-five pieces. The only difference worth remarking seems to consist in the absence of the three tubercles in front, which perhaps may constitute a sexual distinction.

Allied to the above is also a very large species brought from the southern islands, and now in the British Museum: the shell is about three feet and a half long at least; of an ovate-oblong form, widening at the bottom, and contracting considerably on each side the neck: its colour is a dull uniform brown, and its surface smooth: all the divisions are even; yet the whole surface of the shell has, as it were, regular elevations and depressions on different parts.

WRINKLED TORTOISE.

Testudo Rugosa. *T. rugosa nigra, flavo venuloso-variata, scutellis mediis subpanduræformibus.*

Tortoise with black wrinkled shell, mottled and variegated with yellow; with the middle dorsal pieces subpanduriform.

A SHELL of this remarkable species, which does not appear to have been described in any work on natural history, is preserved in the Leverian Museum. It is of a long oval form, somewhat dilated or widened at the hind part; and is of very considerable depth or convexity. Its colour is black, or dark brown, thickly mottled with small and somewhat confluent spots and variegations of pale yellow, which are rather larger on the sides than on the middle of the shell. The three middle divisions of the dorsal row of scutella are, in the Linnæan phrase, somewhat panduriform or fiddle-shaped; while the upper piece is so formed as to resemble the outline of a pitcher, and the lowest is irregularly hexagonal: the side pieces are four in number, and nearly of the general or usual shape: the marginal pieces are twenty-five in number; the upper one very small, and the four lowest on each side pretty deeply emarginated or sub-bifid, so as to give a somewhat serrated outline to that part of the shell. A pretty distinctly marked, but by no means sharp, carina or ridge runs down the dorsal row. The whole upper surface of the shell is strongly wrinkled; every scutellum being marked by numerous, deeply impressed, somewhat

WRINKLED TORTOISE.

*Brown sculp.*



longitudinal sulci or furrows, of various degrees of obliquity; the whole forming an appearance less easy to express in words than by a figure. The under shell is smooth, and of a pale or yellowish white colour, thickly and beautifully mottled with black. The length of this curious shell is nine inches and a half: its width, in the middle, five inches; in the widest or hind part, six inches and a half, and its height, or convexity, three inches, if measured from the bottom of the under shell, and nearly two inches, if from the prominent margin or edge of the upper shell.

The annexed engraving is an accurate representation of the above-described shell of nearly half the natural size. Its native country seems to be unknown.

VAR.

IN the Leverian Museum is a variety, perhaps a sexual difference of the above. In this the shell, instead of being speckled, is marked somewhat obscurely with two or three yellowish horizontal streaks on each scutellum; while the under shell is of a yellowish white, with a row of moderately large, round, blackish spots along the whole circumference, one spot being seated at each commissure of the marginal pieces. A pair of similar spots occur also at the tip or upper part of the sternum, and a pair on each side the concavity at the opening for the hind legs.

SPECKLED TORTOISE.

Testudo Europæa. *T. testa ovali planiuscula subcarinata fusco-atra, punctis striisque albo-flavescentibus radiatis.* Schneid. Schildkr. p. 323.

Tortoise with oval, flattish, smooth, dark-brown shell, marked with very numerous yellowish specks and streaks.

Testudo orbicularis. *T. testa orbiculari planiuscula lævi.* Lin. Syst. Nat. Gmel. 1039. *exclusis synonym. Gronovianis et γ.*

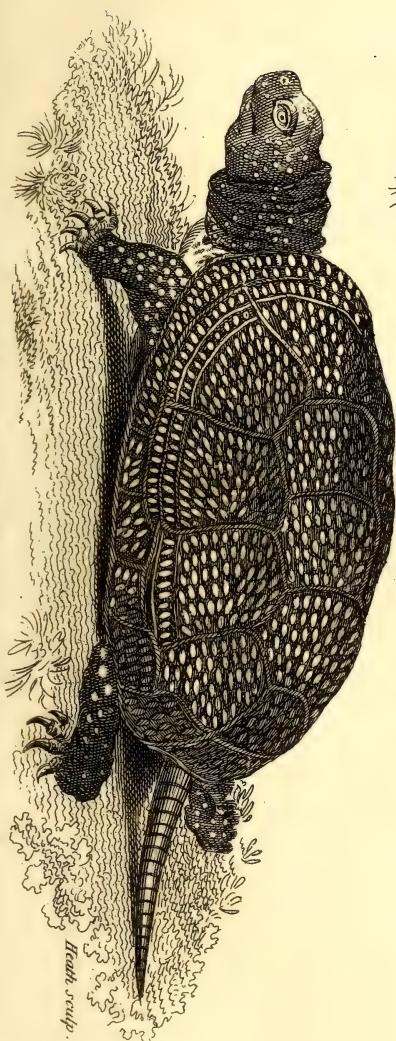
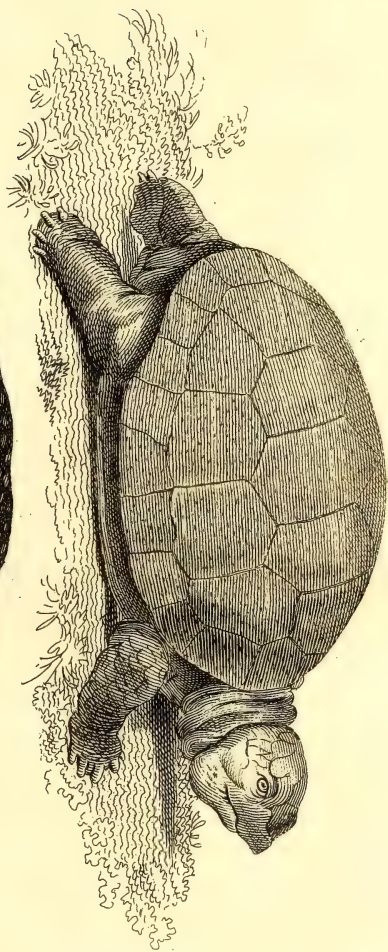
Testudo Meleagris. Speckled Tortoise. *Naturalist's Miscellany*, vol. 4. pl. 144.

T. aquarium dulcium et lutaria. Raj. Quadr. 254.

La Jaune. *Cepede ovip.* 1. p. 135. pl. 6.

THE speckled Tortoise is of rather small size; the shell measuring about four or five inches in length: it is of an olive-brown or blackish colour, smooth, flattish, or but slightly convex, and beautifully marked on the upper surface with very numerous, small, oblong yellow specks, or very short streaks, which are disposed in a kind of radii on each division of the shell: the skin of the neck and breast of the animal is also spotted nearly in the same manner. The disk of the shell is composed of thirteen, and the margin of twenty-five pieces: the under shell is of a whitish yellow, tinged towards the commissures or joints with brown: the head is ovate, somewhat convex above, flattish on each side and beneath; the skin of the neck lax and wrinkly: the legs short and scaly: all the feet are webbed, and the fore feet have five toes; the hind only four: the claws on all the feet are sharp-pointed, and somewhat

L.A. RONDE.
Cepede.



Heath sculp.

SPECKLED TORTOISE.



crooked : the tail is almost half the length of the body, and is thin, attenuated, compressed, and scaly ; it is also spotted in the same manner as the body.

This elegant species is a native of many parts of Europe, being found in Italy, Sardinia, France, Hungary, Prussia, &c. inhabiting lakes and muddy waters, and feeding on aquatic plants, insects, snails, and small fish. Its flesh is said to be esteemed as a food, and is, in some places, sold in the markets : the animal is also occasionally kept in appropriated ponds, and fed or fattened with lettuce-leaves, bread, &c. &c. It may be also conveniently kept in a cellar, and fed with oats scattered on the floor, which it readily eats when they begin to germinate. It deposits its eggs in sandy and sunny places in the beginning of spring ; and it is pretended that they are not hatched till the succeeding spring. It is an animal of extremely slow growth, and seems somewhat to vary in colour, according to the climates in which it is found ; the ground-colour being either greenish, blackish, or of different shades of brown or chesnut.

It seems doubtful whether the species called *T. lutaria* by Linnæus was intended for this animal or not ; and the same doubt remains with respect to the *T. orbicularis* of that author ; since his characters of both will be found in some points to agree, and in others to disagree with the present animal.

VAR.

WHETHER the species described by Cedepe, under the title *La Ronde*, be the same with the above, is perhaps not easily determined. Its manners and habitations seem to agree: that figured by Cedepe seems to have been young, being represented in its natural size, and is, for the satisfaction of the reader, engraved in the present publication.

MUD TORTOISE.

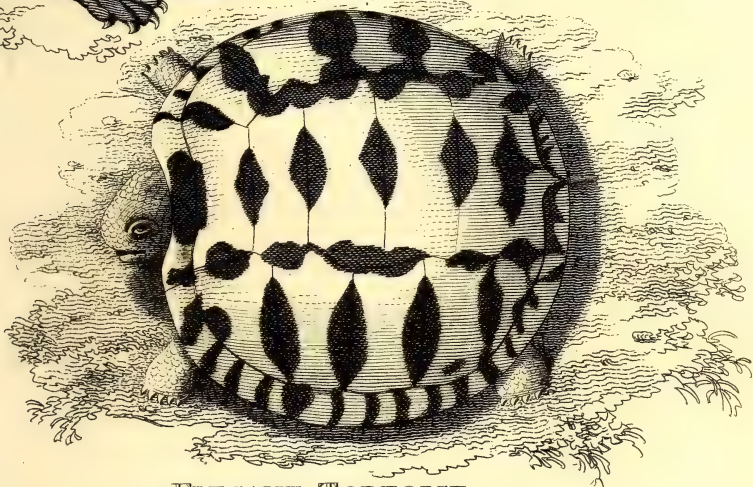
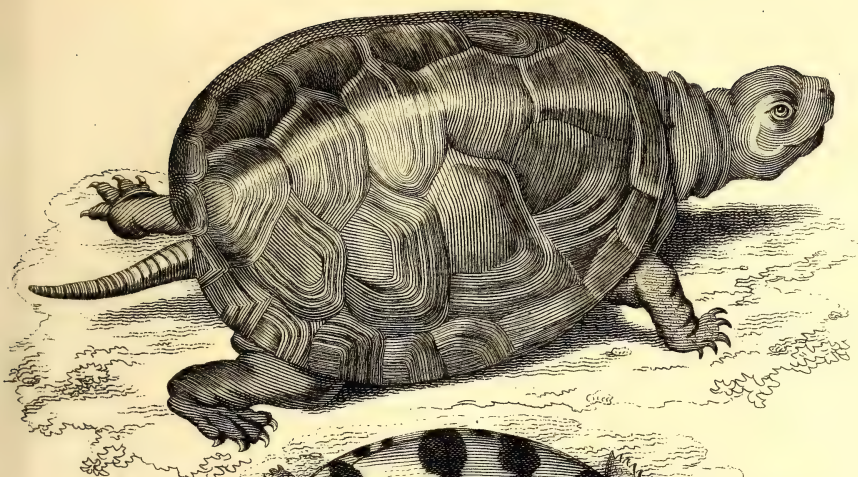
Testudo Lutaria. *T. fusca, cauda corpore dimidio brevior, testa planiuscula.*

Brown Tortoise, with flattish shell, and tail half the length of the body.

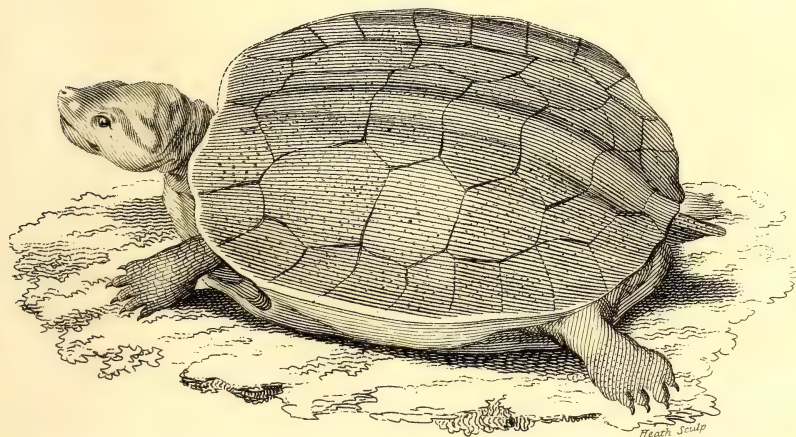
Testudo lutaria. *T. pedibus subpalmatis, cauda corpore dimidio brevior, testa planiuscula, postice tribus scutellis carinata? Lin. Syst. Nat. p. 352.*

La Bourbeuse. *Cedepe ovip. 1. p. 218. pl. 4.*

THIS, which is supposed by the Count de Cedepe to be the *Testudo lutaria* of Linnæus, is said to be extremely common in many parts of Europe, as well as Asia, being found in India, Japan, &c. It is, says Cedepe, in general, not more than seven or eight inches long from the tip of the nose to that of the tail, and about three or four inches in breadth: the disk consists of thirteen pieces, which are striated and slightly punctated



ELEGANT TORTOISE.



LA BOURBEUSE,
Cepede.

in the centre, and along the middle range runs a longitudinal carina: the margin consists of twenty-three pieces, bordered with slight striæ: the colour of the shell is blackish, more or less deep in different specimens, and the general colour of the skin itself is similar: the feet are webbed, and there are five toes before, and four behind; the exterior toe of each foot is unarmed: the tail is nearly half the length of the upper shell, and instead of being folded under the shell, as in most land tortoises, it is stretched out in walking; and on this account the animal has been called *Mus aquatilis* by some of the older naturalists, and when seen walking, one would imagine that a lizard had concealed its body under the shell of a tortoise. Like other tortoises, it sometimes utters a kind of broken or interrupted hiss. This animal is, according to Cépède, no where more common than in France, and is particularly plentiful in Languedoc, and in many parts of Provence; and in a lake of about half a league wide, situated in the plain of Durance, were found such vast quantities, that the neighbouring peasantry were in a manner supported by them for more than three months together.

Though this species be aquatic, it always lays its eggs on land; digging for that purpose a hollow in the ground, and covering the eggs with the mould: the shell is less soft than those of the sea-tortoises or turtles, and the colour less uniform. When the young are first hatched they measure about six lines in diameter. This animal

walks much quicker than the land tortoise, especially when on even ground. It grows for a long time, and has been known to live more than twenty-four years. The taste which it has for small snails, and such kind of wingless insects as frequent the neighbourhood of the waters it inhabits, make it useful in a garden, which it delivers from noxious animals, without doing any mischief itself. Like other tortoises, it may be rendered domestic, and may be kept in a bason or receptacle of water, so contrived on the edges as to give a ready egress to it when it wishes to wander about for prey. Like the rest of the Amphibia, it can also support a long abstinence, and will live for a considerable time, when deprived of parts seemingly the most essential to life, and even of the head itself. The Count de Cepede, adds, that though useful in gardens, it is found to be a very troublesome inmate in fish-ponds; attacking and destroying the fish; biting them in such a manner that they become enfeebled by loss of blood, and then dragging them to the bottom and devouring them, leaving only the bones and some of the cartilaginous parts of the head, and sometimes the air-bladder also, which, floating on the surface, give notice of the enemies with which the pond is infested.

From the above account it should seem that this species is nearly allied to the *T. Europæa*, or speckled tortoise, though differing in colour, &c.

CARINATED TORTOISE.

Testudo Carinata? *T. pedibus digitatis, testa gibbosa, scutellis dorsalibus quatuor anterioribus carinatis, sterno integro.* Lin. *Syst. Nat.* p. 353.

Tortoise with digitated feet, and gibbose shell, with the four first dorsal scutella carinated, and entire sternum.

THE *Testudo carinata* of Linnæus seems a species very little known. In the Leverian Museum is a shell which answers to the Linnæan description, and having a very distinctly marked dorsal carina, may be presumed to be the species intended: I must observe, however, that the epithet *carinata* is by no means a happy one, since there exist other species in which that part is at least as strongly marked as in the present. These, however, were probably unknown to Linnæus at the time when he described his *Testudo carinata*. This shell is one of the smaller kinds, measuring only three inches in length. Its form is broad, or inclining somewhat to orbicular; its convexity moderate, and its colour brown, each scutellum being marked by a pale zone of obscurely triangular and somewhat confluent spots surrounding the areola or central part, which is rather large than small, and roughened by very minute protuberances or points. The edges of each scutellum are surrounded by three or four pretty distinctly marked furrows. The form of the scutella is rather broad, and of the usual angular outline. Down the four first dorsal ones runs

a very strongly marked elevated carina, projecting almost into a tubercle on the back of each: this carina is of a yellow or pale colour, resembling that of the zones before mentioned. The marginal pieces are twenty-five in number, including the uppermost, which is extremely small.

CLOSE TORTOISE.

Testudo Clausa. *T. testa nigricante, maculis difformibus subconfertis flavis, carina dorsali obtusa, sterno bivalvi lorica occludente.*

Tortoise with blackish shell, irregularly spotted with yellow, with obtuse dorsal carina, and bivalve under-shell completely closing the upper.

Testudo clausa. *T. testa ovali gibba, dorsi scutellis carinatis, sterno bivalvi, lorica occludente.* Schoepf. *Hist. Testud.* p. 32. t. 7.

Testudo Carolina. *T. pedibus digitatis, testa gibba, cauda nulla.* *Lin. Syst. Nat.* p. 352. *Lin. Syst. Nat. Gmel.* p. 1041.

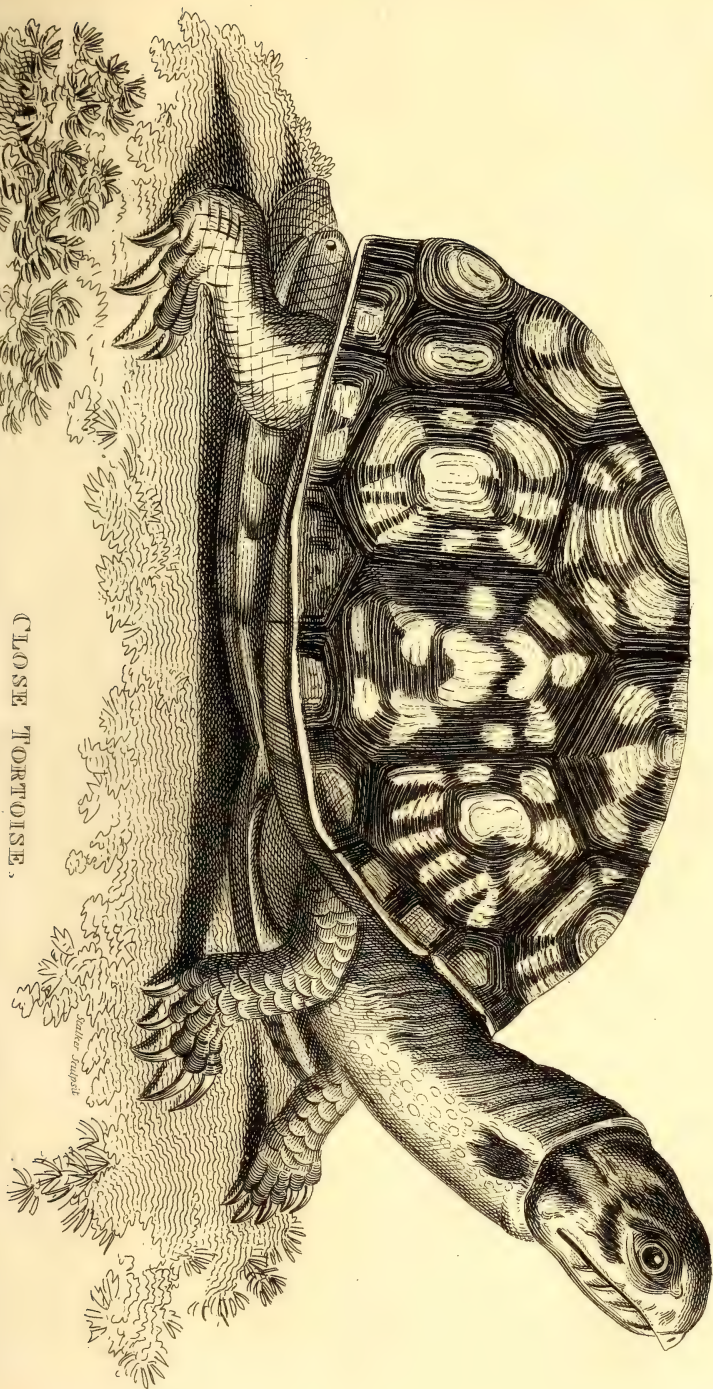
Testudo clausa. *T. disci scutellis carinatis, sterno vix repando, valvularum ope ad scutum apprimendo.* *Lin. Syst. Nat. Gmel.* p. 1042.

Dosen-Schildkroete. *Bloch. Schrift. Berl. Nat. Fr.* 7. p. 131. t. 1.

Land Tortoise from Carolina. *Edw. pl.* 205.

THE Close Tortoise obtains its name from the unusual manner in which the under part of the shell is applied to the upper; being continued in such a manner round the margin, that when the animal withdraws its head and legs, it is enabled accurately to close all parts of the shell entirely

CLOSE TORTOISE,



together, so as to be in a complete state of security; and so strong is the defence of this little animal, that it is not only uninjured by having a weight of five or six hundred pounds laid upon it, but can walk in its usual manner beneath the load. Its length rarely exceeds four or five inches. It is a native of many parts of North America, being chiefly found in marshy situations; though it is occasionally seen also in the driest and hottest places. It is principally sought for on account of its eggs, which are reckoned a delicacy, and are about the size of pigeons' eggs. It feeds on various kinds of small animals, as beetles, mice, and even serpents, which it seizes by the middle, and draws into its shell, and thus crushes them to death: it also eats various vegetable substances. It is so well figured by Edwards, whose representation is copied in the present work, that there is no particular necessity for any other description of its shape and colours than what is given by Edwards himself.

“The head is covered with a hard or shelly covering, of a dark brown colour on the top: on the sides and throat it is yellow, with small black or dusky spots: its nostrils are near together, a little above the end of its beak: the eyes are of a yellowish colour: the neck is covered with a loose skin, of a dark purplish flesh-colour, which partly covers the head when it is not fully extended: the hinder legs and parts about the vent are covered with a skin of the same dull flesh-colour as the neck: the fore legs and feet are

covered with yellow hard scales: it hath five toes on each foot forwards, and four on each of the hinder feet, all armed with pretty strong claws of a dusky colour: the shell above is pretty rising and round, divided into separate scales, of the horny substance called *tortoise-shell*: each scale is engraven as it were with rings round its extremities, which lessen inwards to its centre: the shell above is of a dusky-brown colour, with yellowish spots of various forms: underneath it is flattish, and of a yellow colour, with black clouds and spots: it has only the rudiment of a tail, in which the vent is placed: the lower shell is divided across the middle of the belly, and joined to the upper shell on the sides by a tough though flexible skin; by which means it can, when it draws in its head and legs, close or shut up its shell as firmly as that of an oyster."

This tortoise has, since the time of Edwards, been described as a new species by different authors, under different names; and thus the catalogue of species has been unnecessarily increased. Like others, it is observed to vary a little in the intensity and disposition of its colours; the yellow markings in some being abrupt, or not at all shaded into the ground colour of the shell.

- SULCATED TORTOISE.

Testudo Sulcata. *T. testa ovata fusca, scutellis sulcatis latere flavescentibus.*

Tortoise with ovate brown shell, with furrowed scutella yellow on each side.

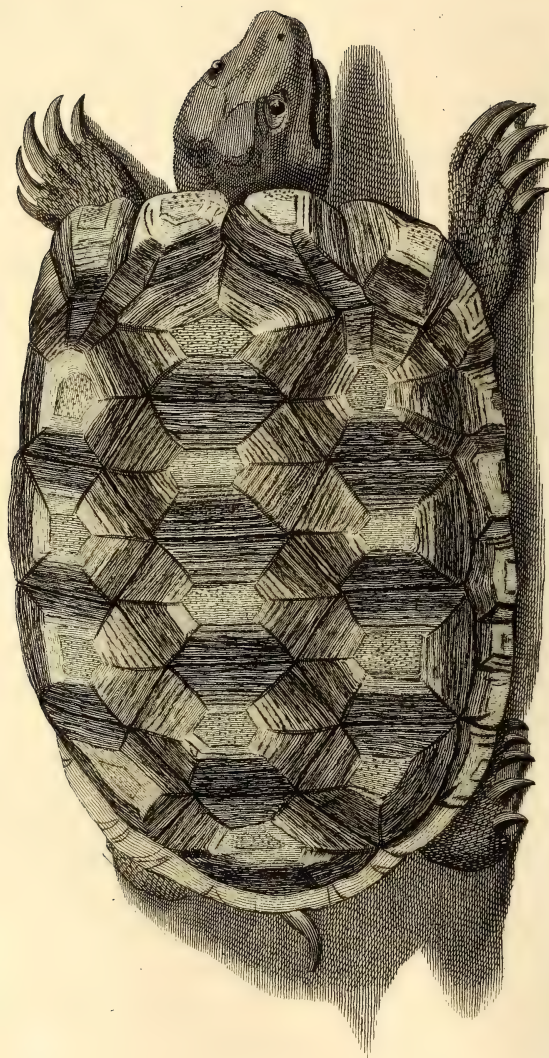
Testudo sulcata. *T. caudata, pedibus digitatis, testa gibba, scutellis lineatis sulco circumscriptis. Linn. Syst. Nat. Gmel. p. 1045. Mill. Tab. Nat. Hist. 26.*

THIS is one of the larger species of Land-Tortoise, appearing by Mr. Millar's figure to be about a foot or rather more in length, from the nose to the tip of the tail. The shell is very convex, and has the general habit of the *Græca* and *Geometrica* as to shape: the disk is divided into thirteen parts or pieces, of the usual subhexagonal and pentagonal form, each being transversely furrowed from the lower edge to the upper area or terminal surface with five or six strongly-impressed sulci; and across these, in an opposite direction, appear to run three impressed lines or radii: the marginal pieces are furrowed or radiated in a similar manner: the general colour of the shell is a dull yellow, each side of the shield-pieces being entirely of that colour, while the upper and lower part of each is brown: the marginal pieces are also obliquely separated into a yellow and brown division: the head is rather large; handsomely and distinctly covered with differently formed scales, those on the top and sides being largest and subhexagonal; those round the eyes small and rounded, and those on the upper part of the neck hexagonal, but

much larger than those round the eyes: the mandibles are serrated in a somewhat unequal manner along the upper edges, the serratures or denticulations being largest at the tip: the fore legs are strongly scaled on the upper surface with lengthened scales, each marked by several transverse furrows; the toes are scarce distinct, but the claws are strong, large, black, and five in number: the hind feet are covered with very small granulations or rounded scales, and have only four claws: the tail is very short, and covered with the same kind of granulated skin.

This species is said to be a native of the West Indies, and perhaps may be the *Hicatee* of Brown, slightly described in his History of Jamaica. The under shell is of a pale colour, and marked by many strongly impressed concentric lines, following the figure of each of the divisions.

Upon the whole, I cannot avoid entertaining a suspicion that this Tortoise may in reality be the same with the following species, or *T. tabulata*.



Blakmore sculp.

TABULAR TORTOISE.

TABULAR TORTOISE.

Testudo Tabulata. *T. testa oblonga gibba fusca, scutellis disci rectangularis sulcatis, areolis flavescentibus.*

Tortoise with oblong gibbose brown shell, with the scutella of the disk rectangular and furrowed; with yellowish centres.

Testudo tabulata. *T. testa oblonga gibba, scutellis disci rectangularis sulcatis, areolis subgibberis. Schoepf. Hist. Test. p. 56. t. 12. f. 2. 13. f. 1. 2.*

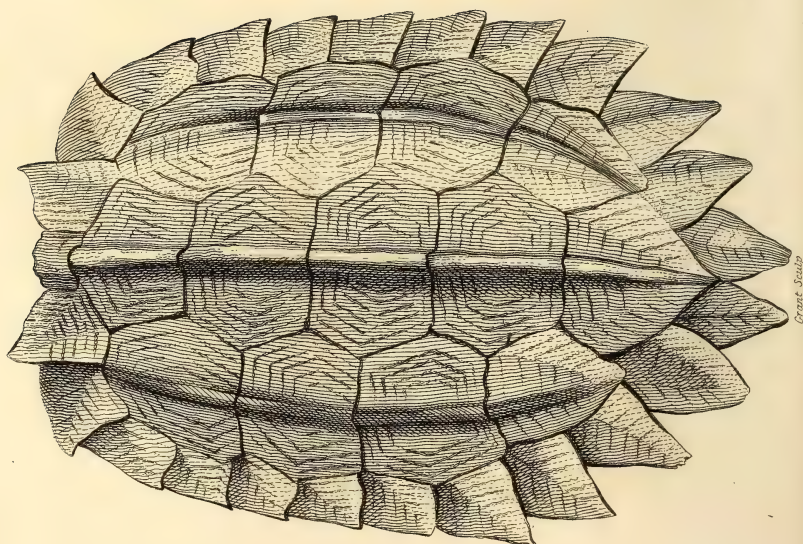
Testudo terrestris Brasiliensis. *Seb. 1. p. 121. t. 80. f. 2.*

THIS was first described and figured in Seba's Thesaurus, and is there said to be a native of Brasil, but it is believed to be rather an African species. It is distinguished by the greater uniformity, both as to shape and size, of the pieces which compose the disk, than in others of the genus; each piece being flattish or but slightly convex, and, in general, of an hexagonal figure, though some of the side pieces are rather pentagonal: the central part of each is large, and slightly granulated, and the sides pretty clearly and strongly sulcated or lineated with numerous furrows, and the whole has a kind of tabular or flattened appearance, as expressed in the specific name: the convexity, however, of the shell itself is very considerable, and the pieces of which it is composed rise towards the middle of each. The colour of this species is a yellowish chesnut, palest or yellowest on the centres of the several divisions: the head is serpentine; the mandibles serrated or denticulated: the eyes black and bright: the neck brown, wrinkled, scaly, and extensile to the length

of four inches: the legs thick and bowed, and spotted with red: the fore feet have five, and the hind four broad and strong claws: the tail is thick and conical, and about an inch in length: the number of pieces on the disk is thirteen, and of the margin twenty-three. It appears to vary somewhat in colour; perhaps from age, &c. Seba's specimen is described as of a purplish colour, with pale-red centres on the divisions. That described by Retzius was blackish, with pale or whitish centres; and Mr. Schoepf's is described as deep brown, with pale orange or fulvous centres. The general length of the shell is about five or six inches. When young, the furrows of the pieces are much fewer than in the advanced animal; and therefore it is not unreasonable to suppose, that their number in this, and many other species, bears some relation to the age of the animal, analogous to the concentric lamellæ in the wood of trees. Specimens of the shell of this Tortoise are preserved in the British and Leverian Museums. I have, under the article *T. Sulcata*, expressed a suspicion that these two animals may, in reality, belong to the same species: this, however, being not certain, I describe each as distinct: both are evidently terrestrial animals, as appears from the form of their feet.



CONCENTRIC TORTOISE.



SERRATED TORTOISE.

Grant Sculp

CONCENTRIC TORTOISE.

Testudo Concentrica. *T. testa ovata, subdepressa subcarinata flava, scutellis zonis fuscis concentricis.*

Tortoise with subdepressed, subcarinated, oval, yellow shell, with the scutella marked by concentric brown zones.

Testudo Terrapin. *T. testa supera depressa, scutellis dorsi anterioribus carinatis, margine laterali costato, postice crenato.*
Schoepf. Test. p. 64. t. 15.

Testudo palustris? *Lin. Syst. Nat. Gmel. p. 1041.*

THE shell of this Tortoise is of a flatter form than in many others, and, in the larger specimens, nearly smooth, but in those of a less advanced age is often marked pretty strongly by several concentric furrows: the middle range of pieces composing the disk are five in number, more elevated than the side-pieces, and mostly hexagonal, projecting behind into an obtuse carina: the side pieces are four on each side, and are pentangular: all are of a brownish chesnut-colour marked with several paler zones or lines; or in other words, it might be said, that the ground colour is pale, with brown zones and centres: the under or lower shell is of a yellowish white, with a dusky or blackish streak continued round each piece, at no great distance from its edge or commissure: the sides of each of the marginal pieces are also marked in a similar manner: the hind part of the margin of the shell appears slightly crenated or notched with somewhat distant undulations, though this is merely owing to the projecting and rounded junctures of the marginal pieces on that part, and not

to any indentations on the pieces themselves. The head is smooth, yellowish, striped, and varied with black: the legs dusky above, and beneath beautifully marked by numerous narrow, transverse, black bars; the skin on each side the body is also marked in a similar manner: the hind feet are widely webbed; and the claws on all the feet are sharp and moderately strong. The shell measures from four to six inches, or more. This species is a native of North America, and is sold in the markets at Philadelphia, and elsewhere, under the name of *Terrapin**. It is an inhabitant of the waters, and seems to have been first described by Dr. Browne, in his Natural History of Jamaica, in which island it is common, and is said by Browne to be a wholesome and even delicate food. It grows, according to that author, to the length of eight or nine inches.

VAR.

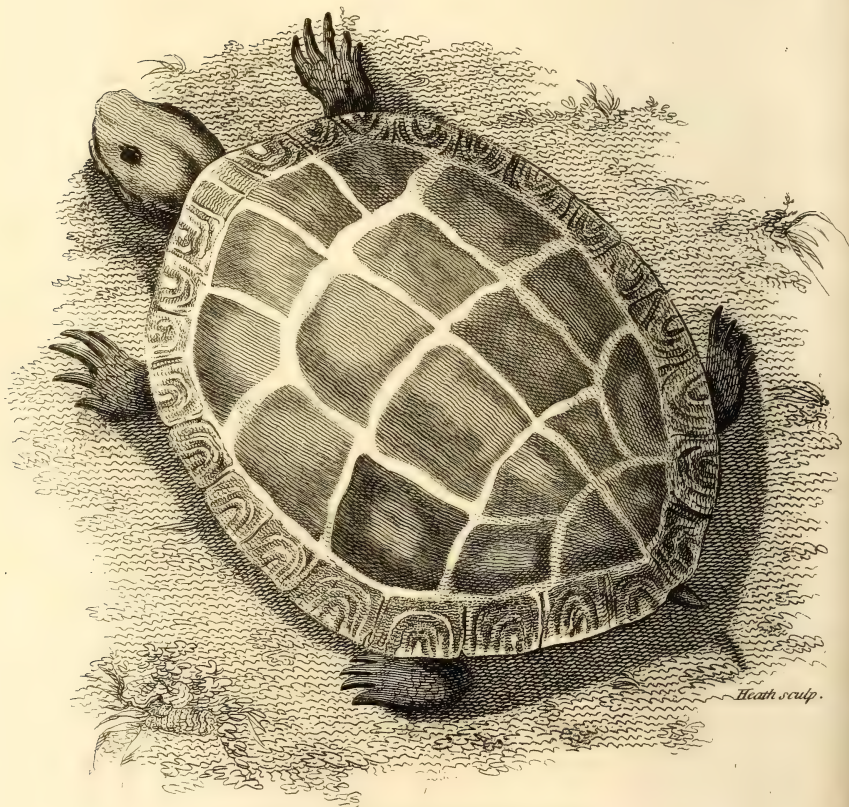
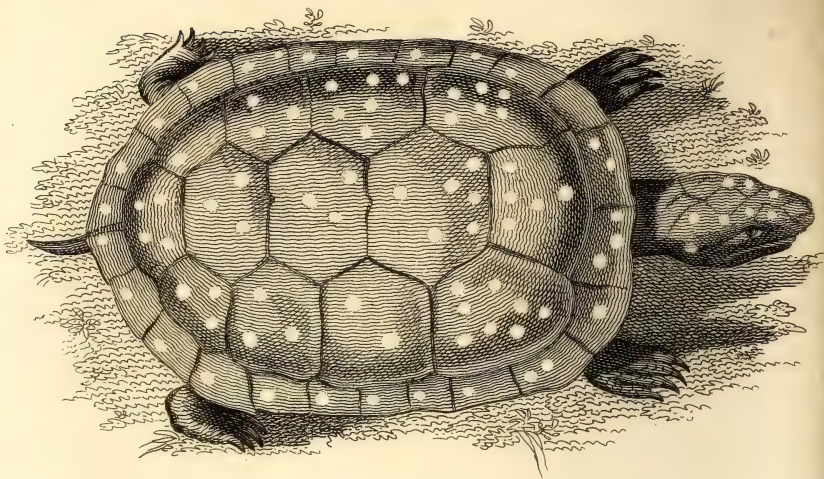
IN the Leverian Museum is a large and beautiful specimen of the shell of this species, which is remarkable for having the dark zones on the several pieces of the shell double; being slightly separated by an intermediate line of the pale or yellowish ground-colour. This shell is represented in the present work.

* This name is applied indiscriminately in America to several other species.



SPOTTED TORTOISE.

10.



PAINTED TORTOISE.

PAINTED TORTOISE.

Testudo Picta. *T. testa oblonga demisse convexa, lævi, fusca, scutellis flavo marginatis.*

Tortoise with oblong, slightly convex, smooth, brown shell, with the scutella bordered with yellow.

T. Testa oblonga, demisse convexa, lævissima, scutellis disci medi subquadrangularibus, flavo marginatis; sterno longitudine scuti. Schoepf. Test. p. 20. t. 4.

Testudo picta. T. testa plana, utrinque macula duplici ex atro-cærulescente notata, scutellis margine flavo cinctis, collo per longitudinem flavo nigroque striato. Linn. Syst. Nat. Gmel. p. 1045.

Cinereous Tortoise? *Brown's Zool. p. 116. t. 48. f. 1, 2.*

THE remarkable colours of the shield of this species are sufficient to distinguish it pretty readily from all others: the shell is of a smooth surface, of a flattened or but slightly convex form, and of a chesnut-brown colour, paler or darker in different individuals, and consisting, as usual, of thirteen segments, each of which is of a form approaching to square, and pretty deeply edged or bordered with pale yellow: a stripe of the same colour also runs down the middle of the dorsal segments, while the marginal pieces, which are twenty-five in number, are each marked by a semioval spot of the same colour at the edge, surrounded by two, or sometimes by three yellow bands, following the direction of the first-mentioned spot, and thus forming so many semi-elliptic yellow zones or stripes on each piece. The neatness and accuracy of these, as well as of the yellow borders on the large or middle segments

of the shell, vary, as may be supposed, on different individuals, and in general seem most distinctly expressed on the smallest specimens. This may be considered as one of the middle-sized tortoises: the shell measuring from four to six inches in length, or somewhat more: the head is moderately small, and covered with a smooth skin; blackish above, but yellow on the sides and under part, and very elegantly streaked in a longitudinal direction, with several double rows of black streaks: the legs are blackish, and marked with two longitudinal yellow stripes: the claws are sharp and long, those on the fore feet five in number, and those on the hind feet four. The tail is blackish, scaly, moderately sharp-pointed, and marked on each side with yellow streaks. It is a fresh-water species, and inhabits slow and deep rivers in North America. In clear sunny weather these animals are said to assemble in multitudes, sitting on the fallen trunks of trees, stones, &c. and immediately plunging into the water on the least disturbance. They are said to swim very swiftly, but to walk slowly; to be able to continue many hours entirely beneath the water, but not to survive many days if kept out of their favourite element. They are very voracious, destroying ducklings, &c. which they seize by the feet, and drag under water. They are sometimes used as a food. The colour, as has been above observed, varies; being sometimes of a blackish brown, at other times of a reddish chesnut: the yellow markings are also either pale or deep in

different individuals, and sometimes whitish: the inferior or under edges of the upper shell, as well as the upper edges or commissures of the lower, are elegantly streaked with black, as if artificially painted, and this variegation is continued over the skin of the sides of the body.

VAR.

THE very small Tortoise, figured in Mr. Brown's Illustrations of Zoology, under the name of *T. cinerea*, notwithstanding some slight variations in point of form, colour, and even in the number of laminae, can hardly be considered in any other light than as the young of the above species. It may also be farther observed, that, on viewing a figure of the *T. picta*, the spectator might at first imagine the shell to be divided into eighteen instead of thirteen segments, on account of the yellow dorsal stripe.

 SPOTTED TORTOISE.

Testudo Guttata. T. testa oblonga modice convexa, laevi, fusca, guttis flavis sparsis.

Tortoise with oblong, moderately convex, smooth, brown shell, with scattered yellow spots.

Testudo terrestris Amboinensis. Seb. 1. p. 130. t. 80. f. 7.

Testudo punctata. T. testa oblonga, modice convexa, laevi, fusca, guttis flavis sparsis. Schoepf. Test. p. 25. t. 5.

THE *Testudo guttata*, or Spotted Tortoise, may be as readily ascertained as the species before de-

scribed, or *Picta*; its colour being equally remarkable. In its shape it resembles the former, having a slightly convex, smooth shell, consisting of the usual number of pieces, viz. thirteen on the middle or disk, and twenty-five on the margin: the form of the middle divisions is obscurely hexagonal, and of the side ones subquadrangular; every piece, both of disk and margin being marked by a few distantly placed, round, yellow spots, of dissimilar size, but all rather small than large. Both spots and ground colour vary somewhat in different specimens; and it is observed that in such shells as are deepest or blackest, the spots are of a paler or more citron yellow: on the contrary, where the shell inclines more to a chesnut or reddish brown, the spots are of a deeper or more orange yellow. This species, like the former, is rather small, and is a native of North America, inhabiting rivers and lakes. The young are scarcely larger than pigeons' eggs, and are very black, beautifully spotted with gold-colour.

ELEGANT TORTOISE.

Testudo Elegans. T. testa orbiculata convexa flava, disco maculis transversis ovatis fuscis.

Tortoise with orbicular, convex, yellow shell, with transverse, oval, brown spots.

Testudo terrestris Ceilonica elegans minor. Seb. 1. p. 126. t. 79. f. 3.

THE animal described and figured by Seba, under the title of *Testudo terrestris Ceilonica elegans minor*, is a small Land-Tortoise, with the shell nearly circular in its outline, and about two inches in length: its colour is a bright yellow, its surface apparently smooth, and at each of the commissures or joinings of the pieces composing the disk is a large oval, or rather leaf-shaped, black or dark brown transverse spot; the pattern forming three rows of transverse spots down the disk; and at the upper junctures, or those where the ultimate pieces of the disk join those of the margin, is a broad spot of a more fasciated form: there are also two rather irregular or slightly flexuous black lists running down the shell, between the rows of spots: the marginal pieces are each marked by a transverse black belt or zone, thus forming a spotted edge round the whole: the head appears to be short and thick, and covered with small scales: the feet short, strong, scaly, and unwebbed, as in other land Tortoises, and furnished with five claws on each: the tail very short. Nothing particular seems to be known of its history. The species

figured by Mr. Schoepf, as the *T. elegans* of Seba, must be a very different animal, and has all the appearance of a variety of the *geometrica*.

AREOLATED TORTOISE.

Testudo Areolata. *T. testa modice gibba, scutellis subquadrangulis, elevatis, profunde sulcatis, areolis depressis scabris.* Schoepf. *Test.* 104. t. 23.

Tortoise with moderately convex shell, with subquadrangular, elevated, deeply furrowed scutella, and depressed rough areolæ.

Testudo terrestris Brasiliensis. *Seb.* 1. t. 80. f. 6.

Testudo areolata. *T. pedibus digitatis, testæ gibbosæ scutellis elevatis subquadrangulis striatis, medio depressis scabris.* Thunb. *Nov. Act. Acad. Suec.* 8. p. 180,

THIS species, long since figured in the work of Seba, appears to have been either overlooked by Linnæus, or purposely omitted on account of his not having had the opportunity of examining a specimen himself, and fearing to rely too much on a figure accompanied by a slight description. It is one of the smaller Tortoises, and is a terrestrial species; but its native country seems to be not distinctly known. Seba calls it Brazilian; but Thunberg, who has described it in the eighth volume of the new Swedish Transactions, affirms that the specimen he possessed came from the East Indies, though he knew not its native country. The length of this animal is about three or four inches only: the shell is moderately convex, the scutella of a subquadrate form, broader than

long, each having a pretty large depressed areola or central part, which is yellow, roughish, and surrounded by a whitish or pale zone, the remaining part or broad margin being brown and marked by three or four pretty distinct or strong furrows. The margin consists of twenty-five pieces. The shell appears to vary, like most others, in the intensity of its colours, and even sometimes in the number of pieces composing the disk, which, in a specimen described and figured in Mr. Schoepf's work, consists of fifteen instead of thirteen pieces. In the Leverian Museum is also a fine specimen with the same part consisting of fourteen pieces.

SERRATED TORTOISE.

Testudo Serrata. *T. testa depressa flavescente, punctis subfuscis irrorata, scutellis omnibus disci carinatis, margine postico testæ serrato.*

Tortoise with depressed yellowish shell, minutely freckled with dusky specks; all the scutella of the disk carinated, and the hinder margin of the shell serrated.

Testudo Spengleri? *Lin. Syst. Nat. Gmel. p. 1043.*

THIS I describe as a new species, agreeing with no other yet figured or mentioned in any work on natural history. It is a small species, the shell measuring only three inches and three quarters in length, and rather more than two inches and a half in the widest part. Its form is that of a long oval; its convexity rather slight: its colour a pale yellow-brown, very thickly freckled, if closely

inspected, with minute, confluent, dusky specks. The disk consists, as usual, of thirteen pieces or scutella, rather broad, those of the lower part having a gradual inclination to a sharpened form, which in the three lowermost is complete: down the back runs an uncommonly distinct carina, extending uniformly through every middle scutellum, and having a breadth of about the tenth of an inch, and a flat surface: down each of the lateral rows of scutella also runs a very distinctly marked carina, but far less conspicuous than the former, and with an acute instead of flattened surface; but the principal character of the species consists in the acute projections of the five lowermost marginal pieces on each side, forming a very strongly and deeply serrated outline on that part of the shell. All the scutella in this species, but especially the pointed lower ones, are somewhat imbricated, so as to lap over each other. The colour of the under shell is blackish, with yellowish margins. This shell is in the Leverian Museum.

LITTLE TORTOISE.

Testudo Pusilla. *T. pedibus subdigitatis, testa hemisphærica, scutellis convexis trapeziis margine striatis disco punctatis.* Lin. *Syst. Nat.* p. 353.

Tortoise with subdigitated feet, and hemispheric shell with convex, trapezial scutella striated on the margin and punctated on the disk.

The African Land Tortoise. *Edw. pl.* 204.

THIS is figured and described by the accurate Edwards, who informs us that he received two specimens from West Barbary, which were kept by him for two years in the garden of the College of Physicians. It is thus described by Edwards: “The iris of the eye is of a reddish hazel colour; the lips hard, like the bill of a bird; the head covered with scales of a yellowish colour; the neck, hind legs, and tail, covered with a flexible skin of a dirty flesh-colour; the fore legs covered with yellow scales on their outsides, which are partly exposed when the legs are drawn in: the shell round, and pretty much rising on its upper side, and flat beneath; the pieces or compartments are of a yellowish colour, clouded and spotted with large and small irregular dusky or blackish spots, and are also furrowed or creased, the creases lessening, one within the other, till they reach the top or middle part of each: the tail is thick, scaly, and about an inch in length; and the vent is situated within the tail itself near the base: there are five claws on the fore feet, and four on the

hind, all strong, black, rather bowed, and sharp-pointed."

On a general view this species appears extremely to resemble the *T. Græca*, or common tortoise, the shell measuring about four inches in length, and the whole animal, from the nose to the end of the tail, about six.

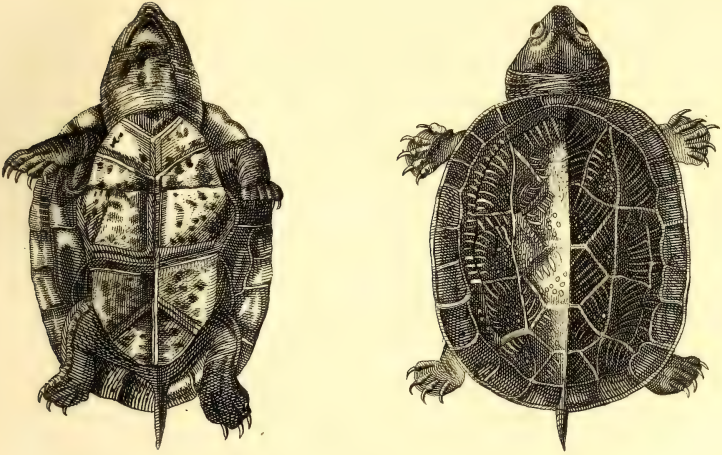
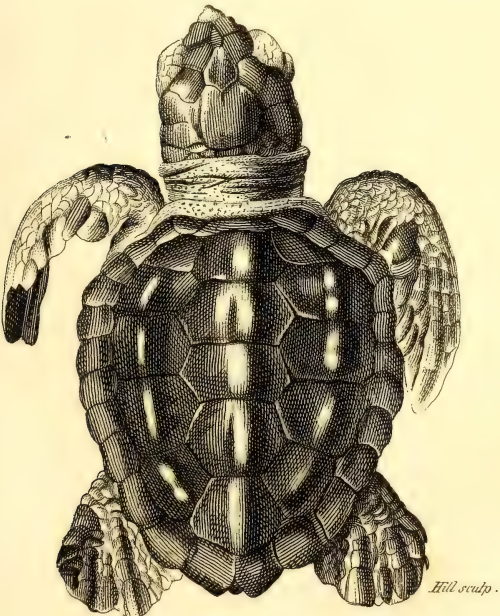
TRICARINATED TORTOISE.

Testudo Tricarinata. T. testa ovali demisse convexa, margine integra, scutellis disci omnibus carinatis. Schoepf. Test. p. 9. t. 2.

Tortoise with oval slightly convex shell, with entire margin, and all the scutella of the disk carinated.

THIS is described by Mr. Schoepf from a small specimen in the collection of Mr. Hermann, preserved in spirits, and seeming to be a very young animal; yet differing in so many respects from any other kind, that Mr. Schoepf has no hesitation in considering it as a distinct species. It agrees as to shape and other particulars with Linnæus's description of his *T. orbicularis*. Its size scarce exceeds that of a large walnut: its colour is blackish: the shell consisting of thirteen scutella, each row marked on the middle by a longitudinal carina, and wrinkled with several lateral furrows and roughish points; the marginal pieces are twenty-three in number: the head is large and of a brown colour, variegated on the sides with white: the legs short, strong, and covered with a scaly skin:

TRICARINATED TORTOISE.

LOGGERHEAD TURTLE. — *Young.*

on the fore feet are five distinct toes, connected to the very tips by a web, and terminated by so many sharp, crooked claws: the hind feet have only four toes, with sharp claws, and connected also by a web, with the appearance of a small unarmed fifth or spurious toe: the tail is short, conical, scaly, pointed, and but little exceeding the margin of the shell in length: the under shell is yellowish, spotted, and varied with brown.

ROUGH TORTOISE.

Testudo Scabra? *T. pedibus palmatis, testa planiuscula, scutellis omnibus intermediis dorsatis.* *Lin. Syst. Nat. p. 351.*

Tortoise with palmated feet, and flattish shell, with all the intermediate scutella elevated on the back.

Testudo terrestris Amboinensis minor. *Seb. 1. p. 126. t. 79. f. 1, 2.*

THE shell of the species quoted by Linnæus in his description of *T. scabra* is figured in its natural size in the work of Seba, who affirms that it never grows larger than represented in his figure; measuring about two inches and a half in length, and near two inches in breadth; being of a cordated figure, or somewhat pointed at the bottom. Its colour, according to Seba, is light reddish, prettily variegated on the head and shell with white lines and spots, in a kind of flamy or wavy pattern: the feet are marked with red specks, and have each five toes with sharp claws: the head is very prominent, and the eyes small: down the back of the disk are represented in Seba's engraving three

very conspicuous white lines or carinæ; so that the title of *tricarinata* would apply to this, as well as to the species so denominated by Mr. Schoepf.

LETTERED TORTOISE.

Testudo Scripta. *T. testa orbiculari depressa, scutellis omnibus superne characteribus notatis; marginis viginti quatuor inferne guttatis.* Schoepf. *Hist. Test.* 16. t. 3. f. 2.

Tortoise with orbicular depressed shell, with all the scutella marked by variously-formed characters, and the marginal pieces spotted beneath.

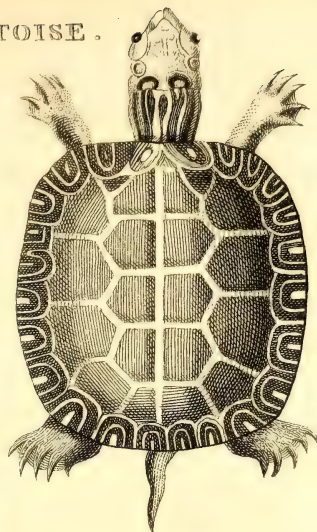
Testudo scabra. *Thunberg.*

THIS also is a species sometimes quoted for the *T. scabra* of Linnæus, and proposed as such by Mr. Thunberg. It is very small, flattish, of an orbicular form, and of a whitish colour, tinged with yellow, and marked over the whole upper surface with variously-formed black, narrow lines and undulations: the number of scutella is thirteen, a keel running down the middle range: the margin appears, from Mr. Schoepf's figure borrowed from Thunberg, to consist of twenty-five pieces, all of which are marked in the same manner as the disk: the head is large and whitish, striped about the neck with longitudinal black streaks; the snout slightly sharpened; the feet large, webbed, and pentadactylous, with sharp claws: the tail about a fourth part of the length of the shell, and sharp-pointed: the under surface is white, with the marginal pieces pale yellow, and a brown spot on each. It evidently appears to be a very young

CINEREOUS TORTOISE.

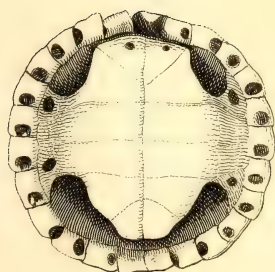
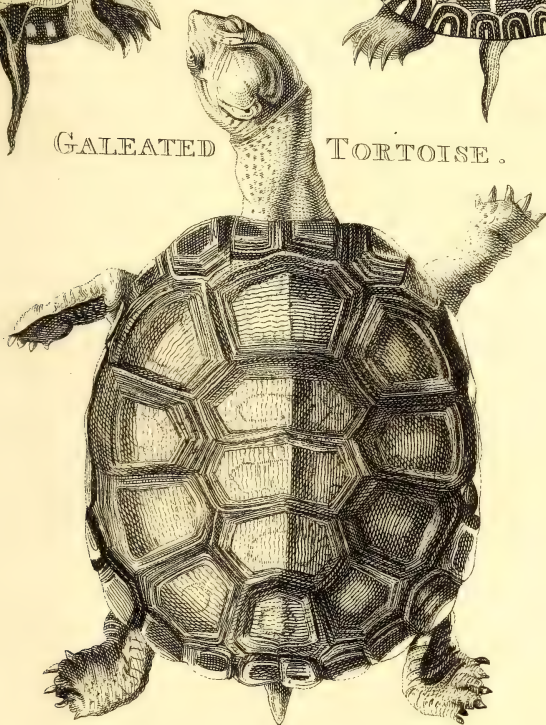
Brown.

12.



GALEATED

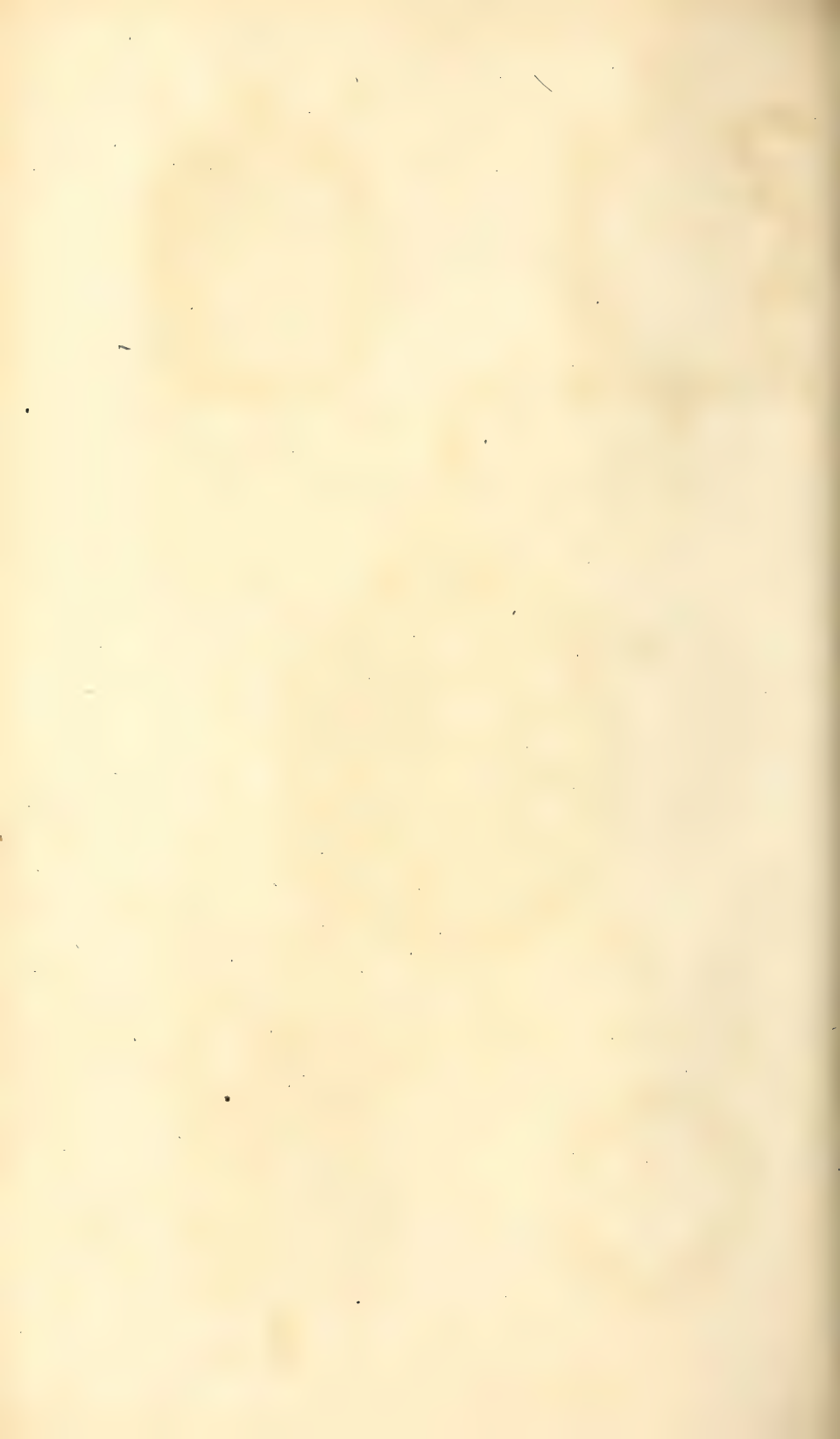
TORTOISE.



LETTERED TORTOISE.



Hill sculp.



animal, the shell not exceeding the size of a half-crown piece. Its native place is not mentioned. Its character given by Thunberg is *T. testa planiuscula, antice retusa, dorso carinato, subtus albo nigroque varia. Pedes palmati; ungues acuti.*

GALEATED TORTOISE.

Testudo Galeata. T. testa depressa ovali, dorsi scutellis tribus intermediis acute carinatis, marginis scutellis viginti quatuor. Schoepf. Test. p. 12. t. 3. f. 1.

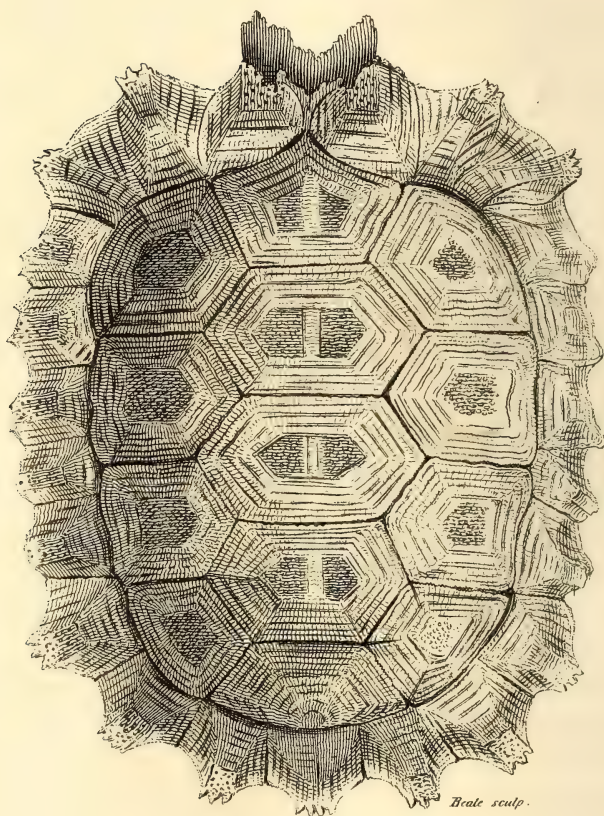
Tortoise with depressed oval shell, with the three middle scutella sharply carinated, and twenty-four marginal pieces.

Testudo scabra. Retzius.

THE species of Tortoise really intended by Linnæus under the title of *scabra*, and very briefly described in the *Systema Naturæ*, it would be utterly in vain to determine; since the characters given will apply equally to several different kinds; but the animal supposed by Mr. Retzius, to be the *T. scabra* of Linnæus, is a small species, the shell of which measures about two inches and a half in length and near two inches in breadth, and rises into a convexity of about one inch: its colour is a pale brown, and it consists of thirteen scutella, the middle range of which is remarkably broad, and strongly carinated in the middle: all are variegated and roughened with blackish oblong points or elevated lines, directed towards the centre, the margins being smooth, blackish, and slightly striated towards the sutures: in some

places the before-mentioned blackish lines pass through the margin; in others not: the marginal pieces are twenty-four in number, and of the same colour as the dorsal ones, but with white edges: the under surface is varied with brown and white: the head is above half an inch long, smooth, and plated above with a kind of shield, and terminates in a slightly pointed snout: the neck is moderately long, roughish, and white beneath: on each side the opening of the lower jaw are two short retractile cirri or verrucæ: the legs are brownish, slightly warted or scaled, and whitish beneath: all the feet are webbed, and have five toes, with as many sharpish claws: the tail is short, conic, and sharp-pointed. The native place of this species is unknown, but it was brought to Mr. Retzius from India, and lived two years, being kept in fresh water, out of which it occasionally staid for a few hours: it lived on bread, &c. and sometimes on flies. From the beginning of October to the middle of May it remained without food, scarce extending its head above the surface of the water. It delighted in sunshine, endeavouring to climb up the sides of the vessel occasionally, in order to enjoy its influence. It being doubtful whether this animal be the real *T. scabra* of Linnæus, Mr. Retzius proposes the trivial name of *galeata*, from the armed or cataphracted covering of the head.

DENTICULATED TORTOISE.

*Beale sculp.*

DENTICULATED TORTOISE.

Testudo Denticulata. *T. pedibus subdigitatis, testa, orbiculato-cordata, margine eroso.* *Lin. Syst. Nat. Gmel. p. 1043.*

Tortoise with subdigitated feet, and orbicularly-cordated shell with denticulated marginal segments.

THE shell of this species is of a pale yellowish-brown colour, measuring about four inches in length, and about three in breadth, and is covered on the disk by broad hexagonal and pentagonal scutella, which are of a flattened form, with a large distinct area or middle space, granulated by small tubercles, the remainder marked by five lines or furrows. The edge of the shell consists of twenty-three pieces, all of which project in a serrated manner round the outline, those toward the ends being terminated by a sort of abrupt denticulated process, as shewn in the annexed engraving, which is taken from a specimen in the Leverian Museum. The convexity of the shell is moderate, and it appears to be a terrestrial species. It is supposed to be a native of North America. The feet in the Gmelinian edition of the *Systema Naturæ* are said to be without distinct toes, and the tail short.

PENSYLVANIAN TORTOISE.

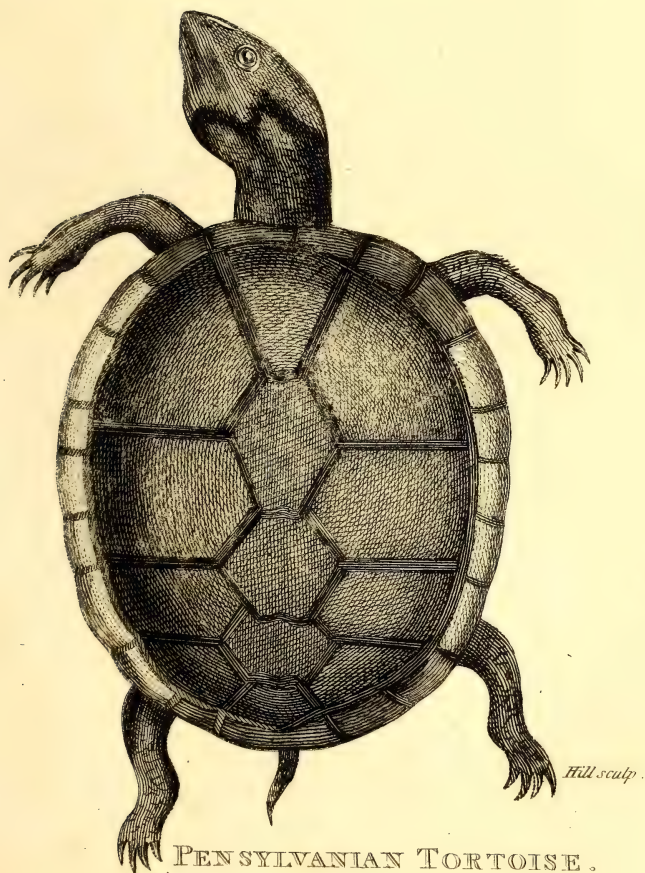
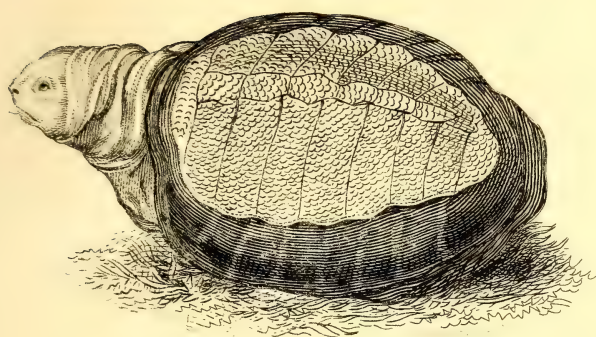
Testudo Pensylvanica. T. testa elliptica lævi unicolore, dorso planiusculo, scutellis intermediis rhomboideis subimbricatis, primo subtriangulo. Schoepf. Test. p. 107. t. 24.

Tortoise with smooth, elliptic, brown shell, with flattish back, the middle range of scutella subrhomboid and subimbricated, the first subtriangular.

Testudo Pensylvanica. T. palmarum unguibus quinque, plantarum quatuor, caudæ apice corneo acuto. Lin. Syst. Nat. Gmel. 1042.

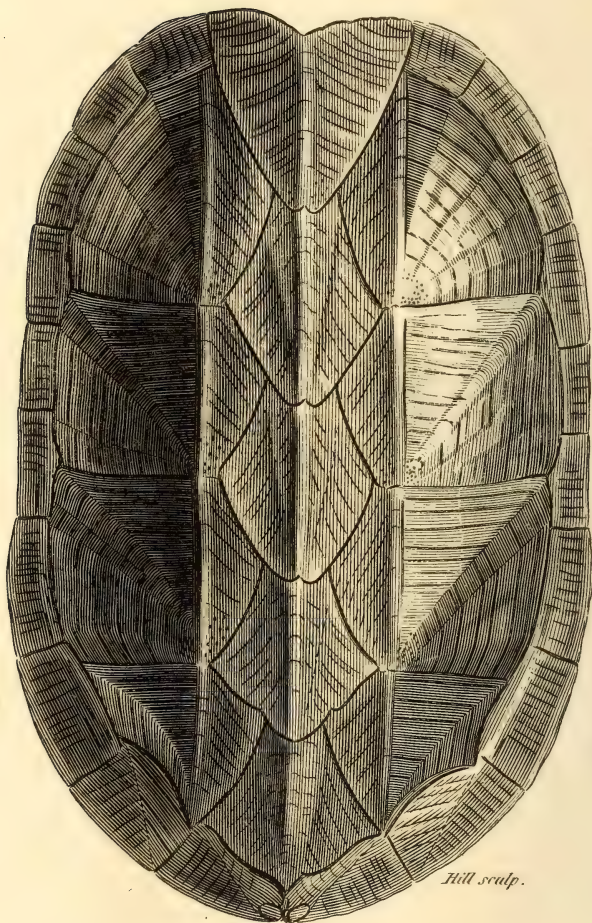
Small Mud Tortoise. *Edw. 287.*

THIS is one of the smaller Tortoises, the shell measuring three or four inches in length when apparently full grown. Its form is oval, its convexity moderate, its surface smooth, and its colour brown: the middle range of dorsal pieces are of a longer form than in other Tortoises, and are so placed as to lap over each other at the tips, which are slightly emarginated: the uppermost piece is of a triangular shape: the two upper side-pieces irregularly or obscurely quadrangular, and the remaining ones pentangular: the marginal pieces are twenty-three in number, the upper or joining piece being very small: the edges of the shell are tinged with dull yellow: the lower shell also is of a yellowish colour, tinged with brown round the commissures or junctures of the pieces, and is constituted nearly on the same plan as in the *close tortoise*, the upper and lower division being moveable in such a manner as to enable the animal to conceal itself almost entirely by shutting



PENNSYLVANIAN TORTOISE .

PENNSYLVANIAN TORTOISE.
var ?



From Leverian Museum.

up the shell. It is from this circumstance that it appears to have been sometimes confounded with the species just mentioned, though widely differing in other particulars. The head, on the parts surrounding the jaws and the eyes, is of a reddish yellow colour: the upper part dusky, as are also the neck, legs, and tail: the feet are webbed, and have five toes on the fore, and four on the hind feet: the tail is small, rather short, and terminates in a callous or horny point, curving slightly downwards. It is a native of North America, and is found in Pennsylvania, &c. inhabiting muddy waters, and is known by the name of the Mud Tortoise. When living, it is said to have a strong musky odour.

VARIETIES.

MR. SCHOEPP mentions a variety, in which the under shell was not moveable, and imagines it to constitute a sexual difference.

In the British Museum, are specimens of about the size figured by Edwards, one of which differs very considerably from the rest in having a very conspicuous carina or ridge down the back, owing to the sudden sloping of the sides: in other particulars it resembles the rest.

A much more remarkable variety (if it be not rather a distinct species) occurs in the Leverian Museum. This shell measures about four inches and three quarters in length, and has every appearance of being full grown. Its colour is

brown; its surface smooth; the shield pieces sulcated in the manner shewn by the annexed figure, and marked by three strongly elevated dorsal carinæ, passing through the whole length of the shell, the sides of which do not slope, but maintain the usual convexity. It is probably a shell of this species in its fullest growth; and may serve as an example of the great impropriety of hastily affixing specific characters and trivial names to animals whose real and complete habit can only be known by examining them in all their stages of growth. The name of *tricarinata* would be much more expressive of the appearance of this shell, than of that to which it is applied in the work of Mr. Schoepf.

LONG-NECKED TORTOISE.

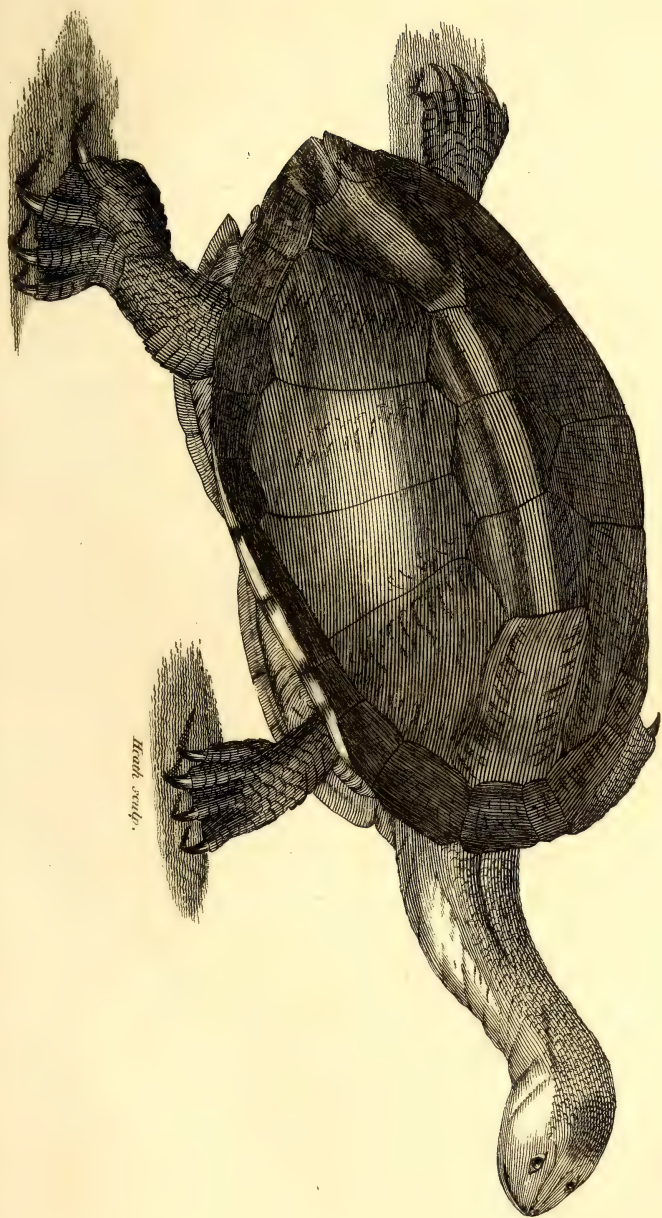
Testudo Longicollis. *T. ovata glabra, collo longissimo.*

Smooth ovate Tortoise, with extremely long neck.

Long-necked Tortoise. *Zool. N. Holl. p. 19. pl. 7.*

THIS species is a native of Australasia or New Holland, and is of the river or fresh-water kind. The shell is of an oval form, moderately convex, of a dark olive-brown colour, and nearly smooth, though in some parts bearing a resemblance to the grain of common black leather. It measures about five inches and a half in length, and about four and a half in breadth: the disk consists of thirteen, and the margin of twenty-five pieces: the under shell is of a yellowish tinge, and stained

LONG-NECKED TORTOISE.

*Head scaly.*

at the junctures with black brown, forming so many crossings of that colour: the head is smooth; the neck extremely long, appearing, so far as could be judged from the specimen described, to be almost always in an exerted state (though this is merely a conjecture): its upper surface is marked with oval scaly granulations, which give it an extremely serpentine appearance: the fore feet are short and tetradactylous; softly scaled, and as it were pinnated by a continuation of skin: the hind feet are of similar structure, but somewhat longer, and more widely pinnated: the claws on all the feet resemble those of birds, and are four in number: the tail is so extremely short as scarce to deserve the name, being merely a slight prolongation, or rather rising, of the skin. The colour of the whole animal above is deep olive-brown; beneath paler, or inclining to whitish. Nothing particular is known of its manners or history.

CASPIAN TORTOISE.

Testudo Caspica. T. testa orbiculari, palmarum unguibus quinis, plantarum quaternis, capite squamato, cauda nuda. Lin. Syst. Nat. Gmel. p. 1041.

Tortoise with orbicular shell, scaly head, five claws on the fore feet, four on the hind, and naked tail.

DESCRIBED by Gmelin in his Russian Travels; who represents it as a native of the region of Hircania, inhabiting fresh waters, and sometimes growing to a vast size, so that some men

may stand together on its shell: the pieces composing the disk are subquadrate; those of the border parallelogrammic: the colour variegated with black and green; the lower shell blackish, spotted with white.

FIERCE TORTOISE.

Testudo Ferox. *T. testa cartilaginea ovata, pedum unguibus tribus, naribus tubulatis prominentibus.* *Lin. Syst. Nat. Gmel.* p. 1039. *Penn. Act. Angl.* 61. p. 266. t. 10.

Tortoise with ovate, cartilaginous shell, three claws on the feet, and tubular, prominent nostrils.

Testudo rostrata? *T. testa orbiculari ovata, monophylla, coriacea, carinata, rugis obliquis e punctis elevatis striata, scabra.* *Schoepf. Test.* 93. t. 20?

T. pedibus palmatis, testa integra, carinata, elevato-striata, scabra? *Thunberg. Nov. Act. Acad. Suec.* 8. p. 179.

T. cartilaginea? *Boddaert. Schr. Berl. Nat.* 3. p. 265.

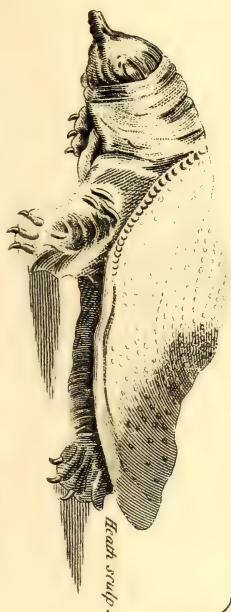
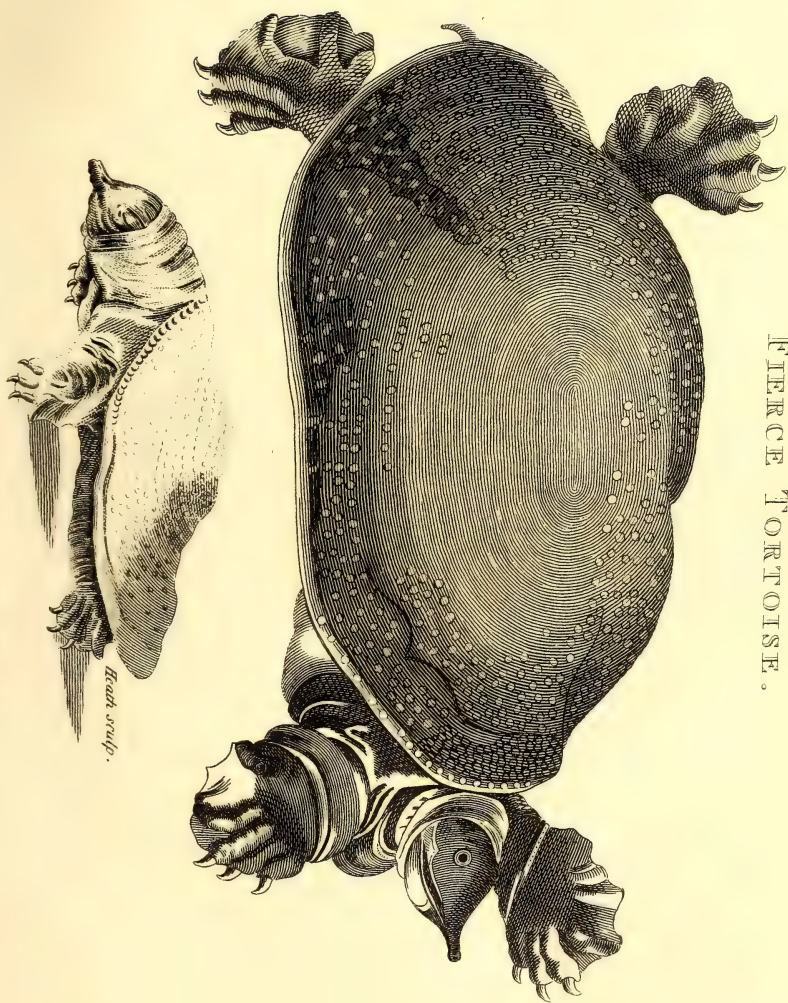
T. Boddaerti? *Schneid. Leipz. Mag. z. Nat. & Oec.* 1786.

T. triunguis? *Forsk. Fn. Arab.* 9.

T. membranacea? *Blumenb. Natur.* p. 257.

THIS remarkable species is distinguished by the unusual nature of its shield, which is hard or osseous on the middle part only, while the edges gradually degenerate into a flexible coriaceous verge: this shield is obscurely marked with five or six transverse bands, and granulated with small warts or prominences, which gradually enlarge as they approach the leathery or flexible edge: the head is rather small, and of an unusual shape, being somewhat trigonal, with the snout very much lengthened, and the upper part drawn out, as it were, into a subcylindric form, terminated

FIERCE TORTOISE.



Beak, sculp.

T. ROSTRATA *Thunberg.*

by the nostrils, and projecting much beyond the lower mandible: the neck, when retracted, appears very thick, and surrounded by many wreaths or folds of skin; but when exerted, is of very great length, so as nearly to equal that of the whole shell: the legs are short, thick, and covered with a wreathed skin: the feet are all furnished with strong and broad webs, connecting the three last toes of each; the three first on each foot are furnished with pretty strong claws; but the remaining ones are unarmed; and besides the real or proper toes are two spurious or additional ones on the hind, and one on the fore feet, serving to strengthen and expand the web to a greater degree: the tail is short, pointed, and curving inwards: the eyes are very small and round. The colour of this animal on the upper parts is a deep brownish olive, and on the under parts white; the shell being marked beneath in a very elegant manner, with ramifications of vessels disposed upon it.

This species is found in Pennsylvania, Carolina, &c. &c. and, contrary to the nature of most others of the tribe, is possessed of very considerable vigour and swiftness of motion, springing forwards towards its assailant, when disturbed or attacked, with great fierceness and alacrity. Its length is about a foot and half, or more, and its breadth about fifteen inches. It was first described by Dr. Garden, who communicated it to Mr. Pen-
nant, by whom it was introduced into the Philosophical Transactions. A specimen examined

by Dr. Garden weighed twenty-five pounds, but it is said to grow so large as to weigh seventy pounds. The individual mentioned by Dr. Garden layed fifteen eggs during the time it was kept, which were exactly spherical, more than an inch in diameter, and fifteen more were found on dissection. Its flesh is said to be extremely delicate, being equal, if not superior, even to that of the Green Turtle.

The Great soft-billed Turtle, described by Mr. Bartram in his Travels, appears to be the same with this. It is said by Mr. Bartram to be of a flat form, two feet and a half long, and a foot and a half broad: the shield soft and cartilaginous on each side, and this part sometimes becomes gelatinous on boiling: the fore and hind part of the shield is beset with round horny warts or tubercles: the sternum or under shell semicartilaginous, except on the middle, where it is bony: the head large and clubbed, and of an oval form: the nose extended, truncated in the manner of a hog's snout: the eyes large, and seated at its base: mouth wide; the edges tumid and wrinkled, and bearded by several long pointed warts or processes, which are extensile at the pleasure of the animal, and give it an ugly and forbidding aspect. Mr. Bartram's figure also represents the throat and part of the neck as furnished with similar warts. Mr. B. adds, that it is fond of the muddy parts of rivers, &c. hiding itself among the roots and leaves of water plants, and thence springing on its prey, stretching out its neck to an incredible length,

and seizing with wonderful celerity young birds, &c. &c. It is found in all the rivers, lakes, and pools, of East Florida, weighing from thirty to forty pounds. The warts or processes on each side the neck may constitute perhaps a sexual difference in this species, since they are not to be found in that described by Dr. Garden and Mr. Pennant.

I must here observe, that the figure of a dried specimen of this tortoise, published in the Philosophical Transactions, does not express with sufficient accuracy the character of the upper surface or shield, which in the specimen itself, now preserved in the British Museum, is marked with very numerous foveolæ or depressed points, and with seven obscurely marked transverse dorsal lines on the shield; thus dividing it into so many segments, while the extremities of the ribs are visible on each side beneath the commencement of the coriaceous part.

VAR. ?

Testudo Rostrata, Thunberg. *Nov. Act, Suec.* 8. t. 7. f. 2, 3.

THIS should seem to be no other than the young of the species above described; the general form and particular structure of the feet, &c. agreeing with the former. The specimen described by Thunberg was about the size of the palm of the hand, and of a brown colour.

Allied to the above is also the species thus briefly described by Forskahl, in his *Fauna Arabica*, un-

der the title of *Testudo triunguis*. T. pedum unguiculis tribus, dorsi disco rugoso orbiculato, limbo depressiore lævi, naribus in cylindro elevato et ultra caput prominente.

CHAGRIN TORTOISE.

Testudo Granulata. T. testa orbiculata, planiuscula, granulata, margine cartilagineo.

Tortoise with orbicular, flattish, granulated shell, with cartilaginous border.

La Chagrinée. *Cepède. Ovip. p. 171. pl. 11.*

THIS remarkable species seems allied to the *T. ferox*, having the shield furnished with a cartilaginous and flexible border. It is described by Mons. Cépède, who tells us it was brought from India by Mons. Sonnerat. It is of a flattish or very slightly convex form, the shield measuring about three inches and nine lines in length, and three inches and six lines in breadth: it appears composed, as it were, of two shields, one over the other; the superior being the smallest and shortest, measuring only two inches and eight lines in length, and two inches in breadth: it is of a bony substance, and roughened all over with small granules like the surface of chagrin, and consists of twenty-three pieces, eight of which are placed on each side, constituting two rows of large segments, separated by the middle range of six smaller pieces, which unite with the last or uppermost piece on the anterior part of the disk: the

borders of this shield are semitransparent and cartilaginous, and through them may be perceived the ribs of the animal, which are eight on each side: the border is wider behind than on the fore parts: the under or thoracic shell is extended more in front and behind than the upper, being a little emarginated in front, cartilaginous, transparent; and consists of seven bony laminæ of unequal sizes, and of a roughened or chagrined surface: three of these divisions are placed forwards, two in the middle, and two behind: the head resembles those of fresh water tortoises, and the wrinkles of the skin round the neck shew that the animal can elongate that part easily: the feet and tail were wanting in the specimen, and nothing particular was known relative to its habits or history.

From its small size we may reasonably suppose it to have been a young animal.

FIMBRIATED TORTOISE.

Testudo Fimbriata. *T. testa ovali subconvexa trifariam carinata, pedibus subdigitatis, naso cylindrico proboscideo, collo utrinque fimbriato.* Bruguiere Journ. d'Hist. Nat. No. 7. p. 253. pl. 13. (*T. Matamata.*)

Tortoise with oval, subconvex, triply carinated shell, subdigitated feet, cylindric snout, and neck fimbriated on each side.

Testudo fimbriata. *T. testa striata et echinata, fronte callosa triloba.* Schneid. Schildkr. p. 349.

Testudo terrestris major, putamine chinato et striato, s. Rapa-rapa. Barrere. Fr. Equin. p. 163.

Testudo scorpioides? *T. pedibus subdigitatis, fronte callosa triloba, cauda unguiculata.* Lin. Syst. Nat. p. 352.

THIS is an animal of a very singular and unpleasing appearance. It was first described by Mons. Bruguiere in the *Journal d'Histoire Naturelle*, published at Paris in the year 1792. The length of the shell is about fifteen inches or more, and its breadth eleven, but the length of the whole animal from the nose to the end of the tail is two feet three inches. The head is large and flat, rounded in front, and edged on the sides with warty and wrinkled membranaceous appendages of about five inches wide, and is also covered behind by a three-lobed prominence: the nose is of a shape resembling a proboscis, being cylindric, ten lines long, truncated, pierced by the nostrils, at the tip, where they are separated by a cartilaginous division: the eyes are round, seated at the base of the proboscis, and are ten lines distant from each other: the mandibles are



FIMBRIATED TORTOISE .

equal in length, and entire; the inferior being furnished with a kind of lateral membrane: the gape of the mouth is wide: the neck is seven inches long, and four and a half broad; above flat and warted; and on each side furnished with six fimbriated membranaceous appendages longitudinally disposed, and alternately larger and smaller: the under part of the neck is also beset with four appendages of a similar kind, which are placed opposite to the two on the head, and are increased by two longitudinal wrinkles: the fore feet are scaly and warty, and have five indistinct toes, with as many longish and sharp claws, which are convex above and flat beneath: the hind feet are scaly, and the toes are still less distinct, and have only four claws, the fifth toe being unarmed and very short: the tail is an inch long, slightly bent, and covered with a granulated skin: the disk of the shell is subconvex, and consists of thirteen semicircular pieces, almost conical, mucronated, and marked with three elevated lines, most prominent on the hind part: all the pieces are wrinkled, and are irregularly notched at the hind part: the marginal pieces are twenty-five in number, almost square, radiated on the surface with oblique wrinkles, and toothed on the interior edge. The colour of the whole is brown, somewhat paler beneath.

This animal is said to be a native of Guiana, and to have been once common in the rivers of the isle of Cayenne; but has been so much thinned by the fishermen, that it is now become rare,

it being considered as an excellent food. It feeds on aquatic plants, and is said to wander by night to some little distance from the banks in quest of pasture. The specimen above described was a female, and was brought alive to Mr. Bruguier: it lived for some time on herbs, bread, &c. and layed five or six eggs, one of which produced a young tortoise in the box in which it was kept.

It does not appear certain that this species is the *T. scorpioides* of Linnæus, since in his very brief description he does not mention the remarkable figure of the snout.

SNAKE TORTOISE.

Testudo Serpentina. *T. testa ovali depressa, trifariam convexa, squamis acuminatis, margine postico rotundato acute serrato.* Schoepf. Test. p. 28. t. 6.

Tortoise with ovate, depressed, triply carinated, sharp-scaled shell, rounded and acutely serrated at the posterior margin.

Testudo serpentina. *T. pedibus digitatis, testa subcarinata, postice obtusa, acute quinquedentata.* Lin. Syst. Nat. p. 354.

Serrated Tortoise. Penn. Arct. Zool. Suppl. p. 97.

THIS species, first described by Linnæus, appears to have been very obscurely known; having been figured in no work of Natural History till it was introduced into Mr. Schoepf's publication. It is a native of North America, where it inhabits stagnant waters, growing to the weight of fifteen or twenty pounds, and even more, and preying on fish, ducklings, &c. &c. seizing its prey with



SNAKE TORTOISE.



great force, stretching out its neck and hissing at the same time. Whatever it seizes in its mouth it holds with great force, and will suffer itself to be raised up by a stick rather than quit its hold. The head is large, depressed, triangular, and covered with a scaly and warty skin: the orbits of the eyes are oblique; the mouth wide; the mandibles sharp; the neck covered by scaly warts, and appearing short and thick when the animal is at rest, but when in the act of springing on its prey, is stretched out to a third part of the length of the shell: the toes of all the feet are distinct, but connected by a web; and are five in number on the fore feet, and four on the hind; all armed with claws longer than the toes themselves: the tail is strait, and about two thirds the length of the shell; it is compressed, attenuated, and crested on the upper part with sharp bony scales directed backwards and gradually decreasing to the tip, while the sides and under part are covered with smaller scales: the under part of the body is covered by a loose, wrinkled skin, beset with smallish soft scales and granules: the shell is slightly depressed, of an oval form, and consists of thirteen pieces in the disk, each of which rises behind into a kind of projection or obtuse point, and is pretty strongly radiated and furrowed in different directions: the general colour of the whole is a dull chesnut-brown, lighter or paler beneath.

This animal conceals itself in muddy waters, in such a manner as to leave out only a part of its

back, like a stone or other inanimate object, by which means it the more easily obtains its prey. Mr. Pennant, in the supplement to his Arctic Zoology, mentions this as a new species, under the name of Serrated Tortoise. In New York it is known by the title of the *Snapping Tortoise*. Linnæus seems to have been mistaken in supposing it a native of China.

SCALY TORTOISE.

Testudo Squamata. *T. corpore ovato superne una cum collo cauda & pedibus squamato, inferne levi & mollî. Lîn. Syst. Nat. Gmel. p. 1040. Schneid. Schildkr. p. 340.*

Tortoise with ovate body, smooth beneath, but covered above, together with the neck, feet, and tail, with numerous scales.

Testudo squamata. *Bont. Jav. p. 82.*

THIS highly singular species is described and rudely figured in Bontius's History of Java, and it may perhaps be doubted whether it properly belongs to this genus or not. It is, according to Bontius, an inhabitant of fresh waters, where it burrows under the banks, in order perhaps to deposit its eggs. The head is small, and resembles that of a snake, with small moveable eyes, and sharp teeth: the whole body, as well as the neck, legs, and tail, covered with scales resembling those of a carp, but stronger or thicker: the tail is rather long than short: the under parts are soft, smooth, and tender. Bontius informs us that he saw two of these animals, and kept one

for some time in water. The Javanese call it by the name of *Taunah*, or the digger: the Chinese by that of *Lary*, or the Runner; a burlesque title, given it on account of its slow pace. Its flesh is said to be extremely delicate; and the Chinese use the pulverised scales dissolved in water, as a remedy in dysenteric cases, and against the colic. The figure in Bontius, which, as before observed, is somewhat rude, in some degree resembles that of a Manis or Pangolin.

This animal has been described from actual inspection by no author but Bontius. Its size is not mentioned. It is said to prey on small fish. By a strange oversight in the *Systema Naturæ*, Linnæus places its name among the synonyms of the *Testudo imbricata*. It seems in some degree to connect the Lizard and Tortoise tribes. Mr. Schoepf is not willing to admit it into the present genus.

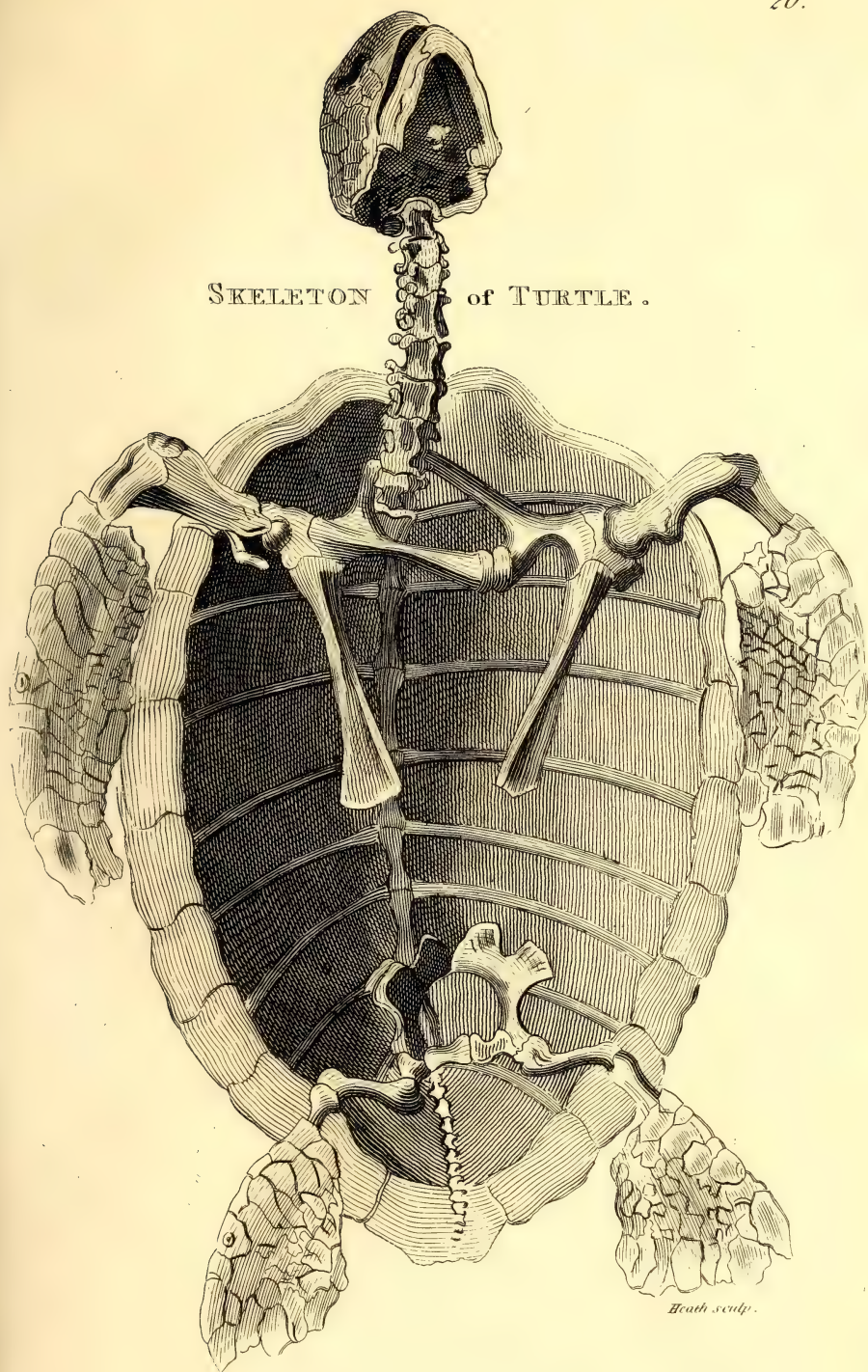
SEA TORTOISES,

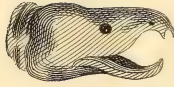
OR

TURTLES.

THE Marine Tortoises, or *Turtles*, as they are commonly called, are distinguished from those of the preceding division by their very large and long fin-shaped feet, in which are inclosed the bones of the toes; the first and second alone on each foot being furnished with visible or projecting claws, the others not appearing beyond the edge. The shield, as in the land tortoises, consists of a strong bony covering, in which are imbedded the ribs, and which is coated externally by hard horny plates; in one or two species much thicker or stronger than those of the land tortoises.

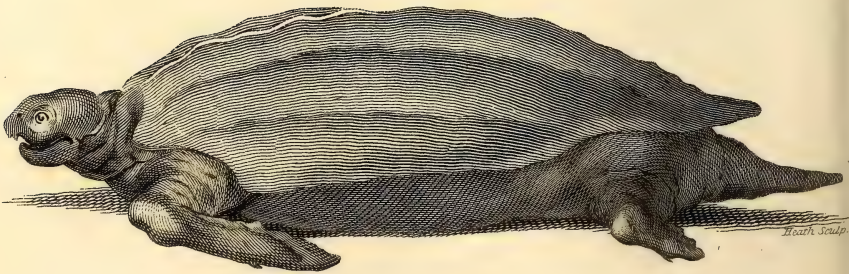
SKELETON of TURTLE.





CORIACEOUS

TURTLE.

*Booth Sculp.*

CORIACEOUS TURTLE.

Testudo Coriacea. T. fusca, subtus pallidior, testa coriacea costis quinque longitudinalibus tuberculatis.

Brown Turtle, paler beneath, with coriaceous shell, marked by five longitudinal tuberculated ribs.

Testudo eoriacea. T. pedibus pinniformibus muticis, testa coriacea, cauda angulis septem exaratis. Lin. Syst. Nat. p. 350.

Testudo testa coriacea, per longitudinem striata. Lin. Syst. Nat. Gmel. p. 1036. Schneid. Schildkr. p. 312.

Coriaceous Tortoise. *Penn. Brit. Zool. 3. p. 7. pl. 1.*

La Luth. *Cepede. Ovip. p. 111. pl. 3.*

OF all the Marine Tortoises this appears to grow to the largest size, having been sometimes seen of the length of eight feet, and of the weight of a thousand pounds. It differs from the rest of its tribe in the form of its body, which is longer in proportion, and still more in its external covering, which, instead of being of a horny nature, as in others, is of a substance resembling strong leather, marked over the whole surface into small, obscurely subhexagonal and pentagonal subdivisions or lineations, which do not take away from the general smoothness of the surface. Along the whole length of this covering or leathery shield run five distinct, strongly prominent, tuberculated ribs or ridges; and indeed if those which border the sides be taken into the account, we may say there are seven ridges on the shield. There is no under or thoracic shell, so that the animal might form a distinct genus from the rest of the tortoise tribe. The head is large, and the

upper mandible notched at the tip in such a manner as to give the appearance of two large teeth or processes, between which, when the mouth is closed, is received the tip of the lower mandible. The fins or legs are large and long, and covered with a tough leathery skin: the tail is rather short and sharp-pointed. The general colour of the whole animal is dusky brown, paler beneath. This singular species is a native of the Mediterranean sea, and has at different periods been taken on the coasts both of France and England. In the month of August, in the year 1729, a specimen was taken about three leagues from Nantz, not far from the mouth of the river *Loire*, and which measured seven feet one inch in length, three feet seven inches in breadth, and two feet in thickness. It is said to have uttered a hideous noise when taken, so that it might be heard to the distance of a quarter of a league; its mouth at the same time foaming with rage, and exhaling a noisome vapour. In the year 1778, a specimen was taken on the coast of Languedoc, which measured seven feet five inches in length. In July, 1756, one was taken on the coast of Cornwall, which, according to Dr. Borlace, “measured six feet nine inches from the tip of the nose to the end of the shell; ten feet four inches from the extremities of the fore fins extended; and was adjudged to weigh eight hundred pounds weight.” The fine specimen in the Leverian Museum was of similar weight, and was taken on the coast of Dorsetshire.

This species is found not only in the European seas, but in those of South America also, and occasionally appears about some of the African coasts.

According to Cepede, the Coriaceous Tortoise is one of those with which the Greeks were well acquainted, and he supposes it to have been the species particularly used in the construction of the ancient lyre or harp, which was at first composed by attaching the strings or wires to the shell of some marine tortoise. We may add, that the ribs or prominences on the back of the shell bear an obscure resemblance to the strings of a harp, and may have suggested the name of Luth or Lyre, by which it is called among the French, exclusive of the use to which the shell was anciently applied.

The Coriaceous Tortoise, says Mr. Pennant, is reputed to be extremely fat, but the flesh coarse and bad: the Carthusians, however, will eat no other species.

It may be added, that the small sea tortoise described by Mr. Pennant in the Philosophical Transactions for the year 1771, is evidently no other than the young of this animal.

GREEN TURTLE.

Testudo Mydas. *T. testa subfusca, scutellis disci tredecim.*

Brownish Turtle, with thirteen scales on the disk.

Testudo Mydas. *T. pedibus pinniformibus, unguibus palmarum binis, plantarum solitariis.* Lin. Syst. Nat. p. 350.

Testudo viridis. *T. pedibus pinniformibus, unguibus palmarum binis, plantarum solitariis, testa ovata.* Schneid. Test. p. 299.

Testudo Mydas. Lin. Syst. Nat. Gmel. p. 1037.

Testudo rostro gallinaceo. Walb. Chelon. p. 85.

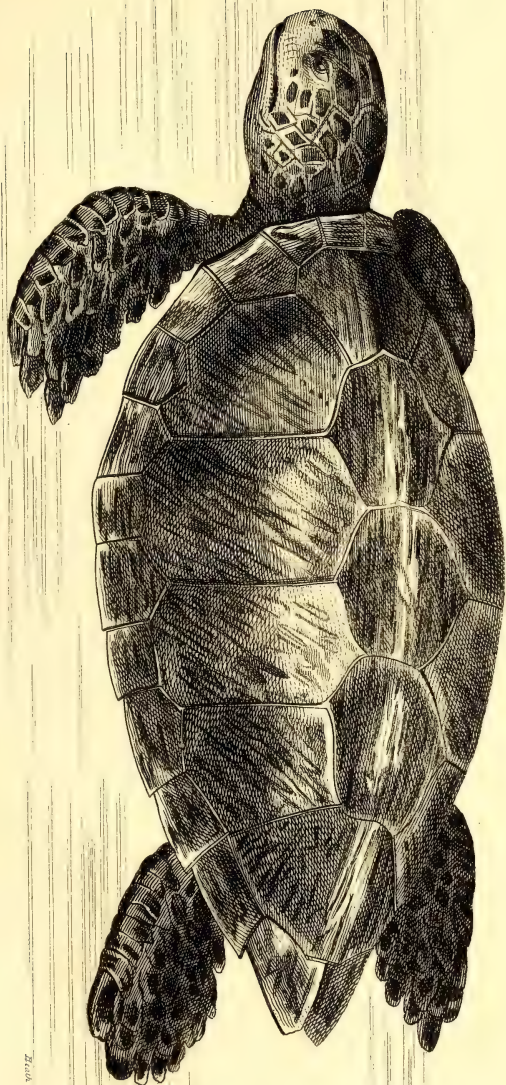
Common Green Turtle.

Esculent Turtle.

THE Green Turtle, so named, not on account of its being externally of that colour, but from the green tinge* which its fat frequently exhibits when the animal is taken in its highest state of perfection, may be considered as one of the largest of this genus; often measuring above five feet in length†, and weighing more than five or six hundred pounds. Its shell is of a somewhat heart-shaped form, or pointed at the extremity, and consists of thirteen dorsal segments or divisions, surrounded by twenty-five marginal pieces. Its colour is a dull palish brown, more or less variegated, with deeper undulations, but not exhibiting those strong and beautiful colours which so peculiarly distinguish that of the *T. imbricata*,

* This is supposed to be chiefly derived from the vegetable substances on which the animal feeds, and more particularly to the *Zostera marina*, or Turtle-grass, of which it is said to be peculiarly fond.

† According to some accounts more than six feet.



Zeich. Schupp

GREEN TURTLE.

or Hawkbill Turtle, which affords the tortoise-shell used for ornamental purposes and in various manufactures, having neither sufficient strength or beauty; but so much is the flesh esteemed, that the inhabitants of the West-Indian islands have long considered it as one of the most excellent articles of food, and have gradually succeeded in introducing a similar taste among some of the European nations. In our own country in particular it is in the highest estimation, and is regularly imported in considerable quantities to supply the luxury of the metropolis. The introduction of the Green Turtle as an article of luxury into England is of no very distant date, and perhaps can hardly be traced much farther than about fifty years backward*. In reality, so little was the nature of the sea tortoises understood by the

* In the part entitled *Historical Chronicle*, of the Gentleman's Magazine for the year 1753, I find the following article: "Friday, Aug. 31, a Turtle, weighing 350lb. was eat at the *King's Arms* Tavern, Pall Mall; the mouth of an oven was taken down to admit the part to be baked."

At p. 489, for the same year, is the following paragraph: "Saturday, Sept. 29, the *Turtler*, Capt. *Crayton*, lately arrived from the Island of *Ascension*, has brought in several Turtles of above 300lb. weight, which have been sold at a very high price. It may be noted, that what is common in the *West Indies* is luxury here."

In the *Historical Chronicle* of the same publication, for the year 1754, I find the following article: "Saturday, July 13, the right hon. the Lord Anson made a present to the Gentlemen of *White's* Chocolate-house of a Turtle, which weighed 300lb. weight, and which laid five eggs since in their possession. Its shell was four feet three inches long, and about three feet wide. When its head was cut off, at least five gallons of blood issued from it, and so

Europeans before that period, that the different kinds were in general confounded by navigators, whose accounts relative to their character as a food varied according to the species which they happened to take for that purpose; some insisting that the Turtle was a coarse and unpalatable diet, while others considered it as of the highest degree of excellence.

“Of the Sea Turtles,” says Catesby, “the most in request is the *Green Turtle*, which is esteemed a most wholesome and delicious food. It receives its name from the fat, which is of a green colour. Sir Hans Sloane informs us, in his History of Jamaica, that forty sloops are employed by the inhabitants of Port Royal, in Jamaica, for the catching them. The markets are there supplied with Turtle as ours are with butcher’s meat. The Bahamians carry many of them to Carolina, where they turn to good account; not because that plentiful country wants provisions, but they are esteemed there as a rarity, and for the delicacy of their flesh. They feed on a kind of grass, growing at the bottom of the sea, commonly called Turtle-grass. The inhabitants of the Bahama islands, by often practice, are very expert at catching Turtles, particularly the Green Turtle. In April they go, in little boats, to Cuba and

full was it of life, that the mouth opened and shut for an hour after it was cut off.”

The above paragraphs are sufficient to shew that the introduction of Turtle into England was at that time of very recent date, and that the dressing one at a tavern was an article of sufficient importance to be noticed in a newspaper.

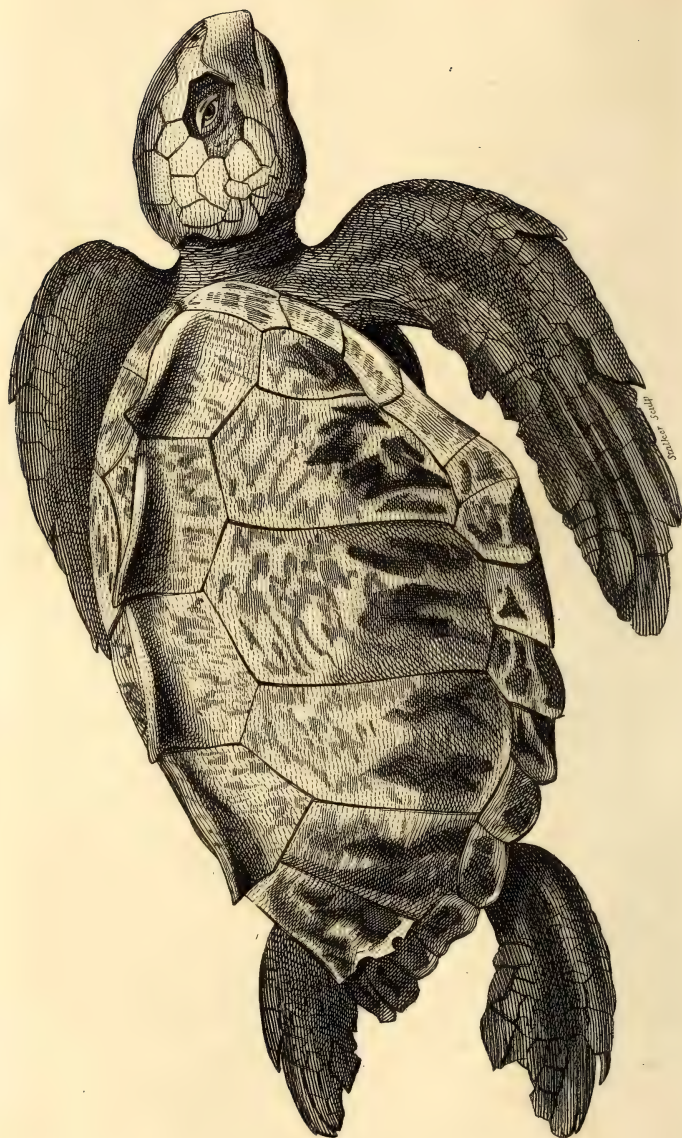
other neighbouring islands, where, in the evening, especially in moonlight nights, they watch the going and returning of the Turtle to and from their nests, at which time they turn them on their backs, where they leave them, and proceed on, turning all they meet; for they cannot get on their feet again when once turned. Some are so large that it requires three men to turn one of them. The way by which the Turtle are most commonly taken at the Bahama islands is by striking them with a small iron peg of two inches long, put in a socket, at the end of a staff of twelve feet long. Two men usually set out for this work in a little light boat or canoe, one to row and gently steer the boat, while the other stands at the head of it with his striker. The Turtle are sometimes discovered by their swimming with their head and back out of the water, but they are oftenest discovered lying at the bottom, a fathom or more deep. If a Turtle perceives he is discovered, he starts up to make his escape, the men in the boat pursuing him, endeavour to keep sight of him; which they often lose, and recover again by the Turtle putting his nose out of the water to breathe: thus they pursue him, one paddling or rowing, while the other stands ready with his striker. It is sometimes half an hour before he is tired: then he sinks at once to the bottom, which gives them an opportunity of striking him, which is by piercing him with an iron peg, which slips out of the socket, but is fastened with a string to the pole. If he is spent and tired by being long

pursued, he tamely submits, when struck, to be taken into the boat or hauled ashore. There are men who by diving will get on their backs, and by pressing down their hind-parts, and raising the fore-part of them by force, bring them to the top of the water, while another slips a noose about their necks."

Though the Green Turtle is a native of the West-Indian seas, yet it is sometimes driven by storms out of its usual residence, and instances have occurred in which it has been taken on the coasts of Europe. An occurrence of this kind is said by the Count de Cepede to have happened in France, a Turtle having been taken at Dieppe in the year 1752, which weighed between eight and nine hundred pounds, and was almost six feet in length, and four wide. It may, however, be doubted whether this animal was not rather a *Caretta* or Loggerhead, than a Green Turtle. Another, of still larger size, is also said to have been taken on the coast of France, about two years afterwards.

"The Sea Tortoises, or Turtles, in general," says Catesby, "never go on shore but to lay their eggs, which they do in April: they then crawl up from the sea above the flowing of high water, and dig a hole above two feet deep in the sand, into which they drop in one night above an hundred eggs, at which time they are so intent on Nature's work, that they regard none that approach them; but will drop their eggs into a hat, if held under them; but if they are disturbed before they begin to lay, they will forsake the place, and seek an-

LOGGERHEAD TURTLE.



other. They lay their eggs at three, and sometimes at four different times; there being fourteen days between every time; so that they hatch and creep from their holes into the sea at different times also. When they have laid their complement of eggs, they fill the hole with sand, and leave them to be hatched by the heat of the sun, which is usually performed in about three weeks." It may be proper to add, that the eggs are about the size of tennis-balls, round, white, and covered with a smooth parchment-like skin.

LOGGERHEAD TURTLE.

Testudo Caretta. *T. variegata, scutellis dorsalibus quindecim, intermediis postice gibbis.*

Variegated Turtle, with fifteen dorsal scales, those of the middle range gibbous toward their tips.

Testudo Caretta. *T. pedibus pinniformibus, unguibus palmarum plantarumque binis, testa ovata acute serrata.* Lin. Syst. Nat. p. 351.

Testudo scutis dorsalibus postice gibbis, unguibus palmarum plantarumque binis. Lin. Syst. Nat. Gmel. p. 1038.

Testudo Cephalo. Schneid. Schildkr. p. 303.

T. testa ovato-cordata, serrata; scutellis disci quindecim, dorsalibus postice gibbis. Schoepf. Test. p. 67.

THIS species exceeds in size* every other yet known, except perhaps the *coriacea*. In its general

* In the Leverian Museum is a skull, seemingly of this species, which is said to have been taken from a turtle weighing more than sixteen hundred pounds: it measures rather more than a foot in length.

appearance it most resembles the *Mydas* or green turtle, but is distinguished by the superior size of the head, the proportional breadth of the shell, and by its deeper and more variegated colours, resembling those of the *T. imbricata*, or Hawks-bill ; but its principal mark of distinction consists in the number of dorsal segments or scutella of the shell, which instead of thirteen, as in other species, amount to fifteen ; the lateral as well as the middle range containing five pieces, of which the two superior are considerably smaller than the rest. This number (except in cases of extraordinary variety) is observed to be constant, and therefore forms a far more certain specific character than the number of claws on the fins, by which Linnæus attempted to distinguish the marine tortoises. Each of the scutella in the middle dorsal range is also extremely protuberant at the end or tip, rising into a subacute prominence, and thus forming a row of tubercles along the back of the shield. The fore feet are very large and long : the hind feet much shorter, though broad. This animal inhabits the same seas with the green turtle, but is also diffused into very remote latitudes, being often found in the Mediterranean, and in particular about the coasts of Italy and Sicily. Considered in a commercial view, it is of little or no value ; the flesh being coarse and rank, and the laminæ or plates of the shell too thin for general use. It is said, however, to afford a good quantity of oil, which may be used for lamps, &c. The Loggerhead Turtle is a very strong and fierce

animal, and is even dangerous; defending itself with great vigour with its legs, and being able to break the strongest shells and other substances with its mouth. Aldrovandus assures us, that on offering a thick walking-stick to one which he saw publicly exhibited at Bologna, the animal bit it in two in an instant.

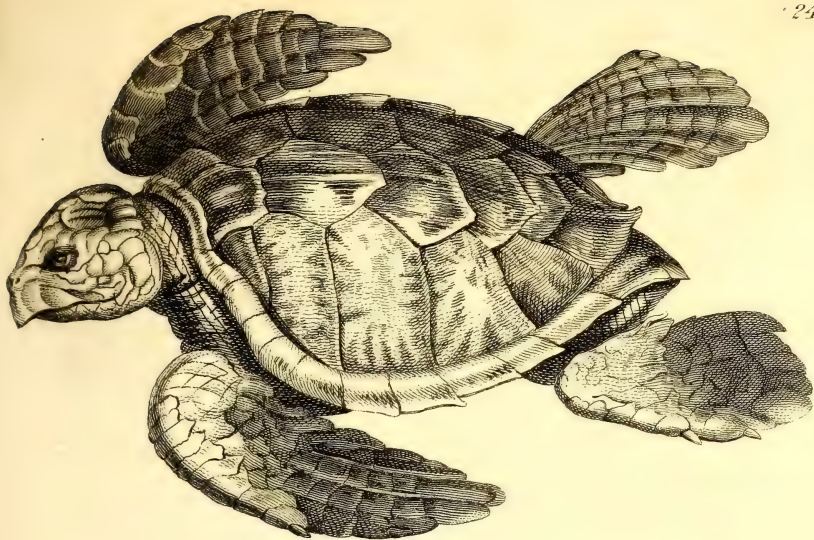
“The Loggerhead Turtles,” says Catesby, “are the boldest and most voracious of all other turtles: their flesh is rank, and therefore little sought for, which occasions them to be more numerous than any other kind. They range the ocean over, an instance of which, among many others that I have known, happened the 20th of April, 1725, in lat. 30 degrees north. When our boat was hoisted out, and a Loggerhead Turtle struck as it was sleeping on the surface of the water: this by our reckoning, appeared to be the midway between the *Azores* and the *Bahama-Islands*; either of which places being the nearest land it could come from, or that they are known to frequent; there being none on the north continent of America, farther north than Florida. It being amphibious, and yet at so great a distance from land in the breeding-time, makes it the more remarkable. They feed mostly on shell-fish, the great strength of their beaks enabling them to break very large shells, as the large *Buccinums* and *Trochi*.”

The Sea Tortoises, like the terrestrial ones, may well be supposed to vary a little sometimes, as to the exact regularity and number of their scales or scutella. We may, therefore, on this principle,

account for the contradictory descriptions met with in authors relative to species which, in every respect, but the number of scales, appear to be the same. An instance of this occurs in the seemingly accurate figures of Gottwald, which agree in general appearance with those of the *Mydas*, but at the same time have more numerous scales on the shield, and consequently do not correspond with the established character of that animal; or if we suppose them, which is more probable, to represent the *Caretta*, they still exhibit a variety with sixteen instead of fifteen scales on the shield.

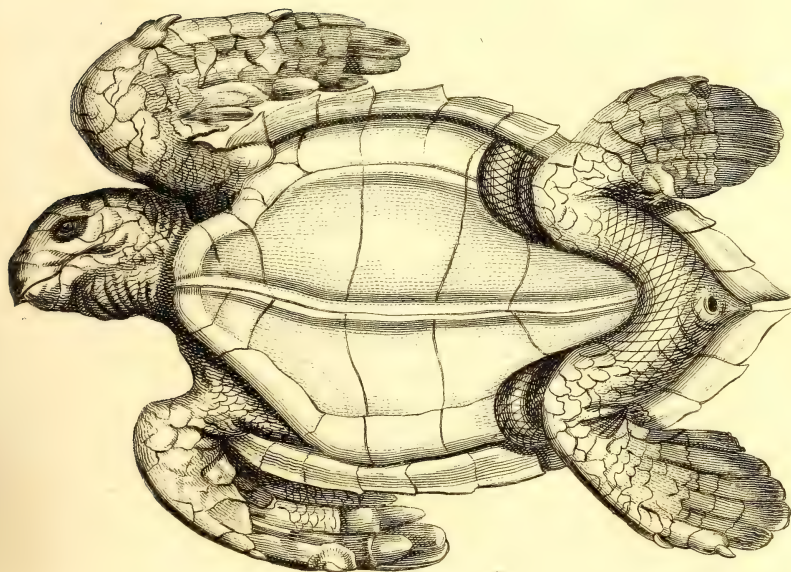
The species figured in Aldrovandus, Quad. Ovip. pp. 714, 715. was probably intended for the *Caretta*, having fifteen dorsal scales: it is not, however, to be considered as a very accurate representation of the animal, and is merely admitted into the present publication in order to enable the scientific reader to exert his own judgment on the subject.

In reality it is not without a very careful examination that the true specific differences of the marine tortoises can be well understood; since, exclusive of the plates of the shell, they are known to vary in those marks which have been sometimes fixed upon as specific characters, and particularly in the number of external or visible claws on the fins, from which Linnæus attempted to distinguish them; subsequent observations having proved that this mark is perhaps less to be depended upon than any other; and we are ex-

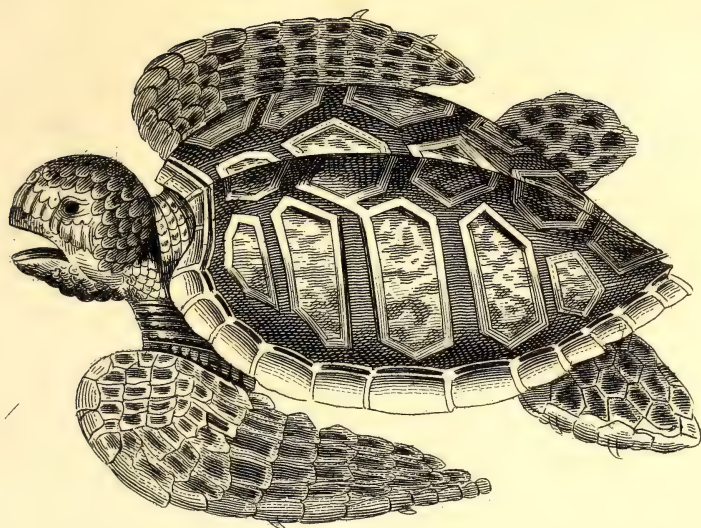


LOGGERHEAD TURTLE.

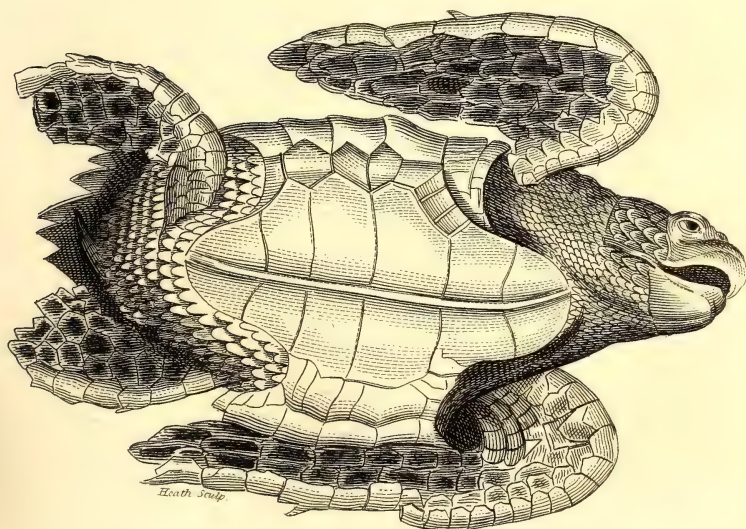
from Gottwald.

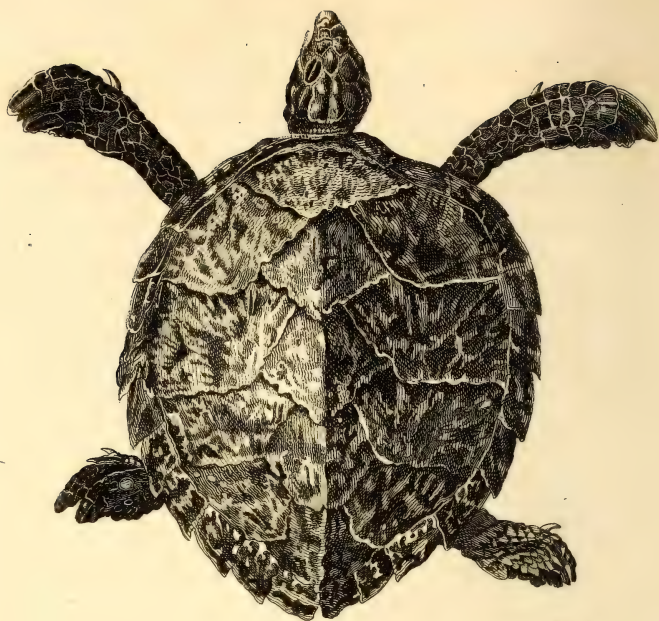


Hill sculp.

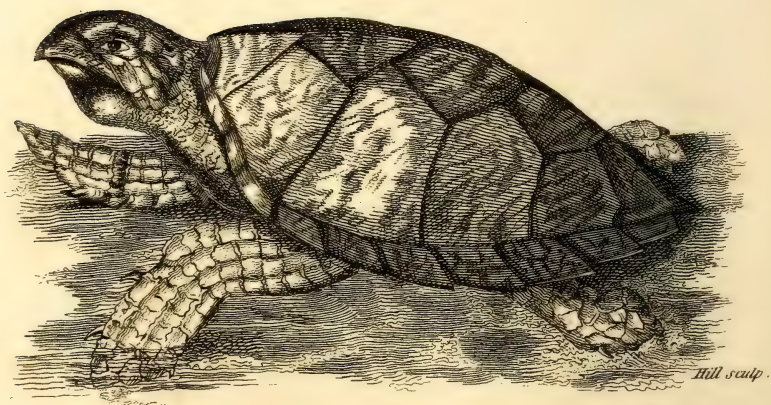


LOGGERHEAD TURTLE,
from Aldrovandus.





IMBRICATED TURTLE.



pressly informed, by an author quoted in Mr. Schoepf's publication *, that on examining a great many specimens of the *T. Mydas*, or common green turtle (which Linnæus characterises by having two claws on the fore and one on the hind feet), some were found with two claws on all the feet, others with two claws on the fore and one on the hind; and, lastly, others with only a single claw on all the feet.

IMBRICATED TURTLE.

Testudo Imbricata. *T. variegata*, scutellis disci imbricatis tredecim.

Variegated Turtle with thirteen imbricated scales on the disk.

Testudo imbricata. *T. pedibus pinniformibus, testa cordata subcarinata serrata, scutellis imbricatis, cauda squamata.* Lin. *Syst. Nat.* p. 350.

T. palmarum plantarumque unguibus binis, scutis laxè atque imbricatim incumbentibus. Lin. *Syst. Nat. Gmel.* p. 1036. *Schneid. Schildkr.* p. 309.

Imbricated Turtle, or Hawksbill.

THE Testudo imbricata is so named from the peculiar disposition of its scales or laminæ, which commonly lap over each other at their extremities in the manner of tiles on the roof of a building. The outline of the shell, viewed from above, is more heart-shaped than in other sea tortoises, and terminates more acutely: each of the middle row of scales on the back is also of a sharpened form

* Quotation given by Mr. Schoepf from a writer on this subject in the *Allgem. Litt. Zeit. Suppl.* 1787. No. 19. p. 148.

at the tip, more especially in the young or half-grown animal, and has a ridge or carina down the middle: the head is smaller in proportion than in other turtles; the neck longer, and the beak narrower, sharper, and more curved, so as to bear no inconsiderable resemblance to the bill of a hawk, from which circumstance the animal derives its common or popular name of the *Hawksbill Turtle*. The fore legs are longer than in the rest of the tribe, and it is said that when turned or laid on its back, the animal is enabled by their assistance, to reach the ground, in such a manner as to recover its former situation, which no other turtle can do. In old specimens the neatness of the shell, and the well-defined outline of the scales, is occasionally impaired, and this seems to be one principal reason of its having been sometimes confounded with the *Caretta*, or Loggerhead Turtle. The Hawksbill Turtle is a native of the Asiatic and American seas, and is sometimes, though less frequently, found in the Mediterranean. Its general length seems to be about three feet, from the tip of the bill to the end of the shell; but it has been known to measure five feet in length, and to weigh five or six hundred pounds. In the Indian ocean in particular, specimens are said to have occurred of prodigious magnitude.

The shell of this animal was anciently used for a shield, and still serves for that purpose among barbarous nations. The flesh is in no estimation as a food, the lamellæ or plates of the shell, which are far stronger, thicker, and clearer than in any

other kind, constituting the sole value of the animal, and affording the substance particularly known by the name of *tortoise-shell*: they are semitransparent, and most elegantly variegated with whitish, yellowish, reddish, and dark brown clouds and undulations, so as to constitute, when properly prepared and polished, one of the most elegant articles for ornamental purposes.

The natural or general number of the dorsal pieces is thirteen; the marginal row consisting of twenty-five smaller pieces. This external coating is raised or separated from the bony part, which it covers, by placing fire beneath the shell; the heat soon causing the plates to start, so as to be easily detached from the bone. These plates vary in thickness, according to the age and size of the animal, and measure from an eighth to a quarter of an inch in thickness. A large turtle is said to afford about eight* pounds of tortoise-shell.

In order to bring tortoise-shell into the particular form required on the part of the artist, it is steeped in boiling water, till it has acquired a proper degree of softness, and immediately afterwards committed to the pressure of a strong metallic mould of the figure required; and where it is necessary that pieces should be joined, so as to compose a surface of considerable extent, the edges of the respective pieces are first scraped or thinned, and being laid over each other during their heated

* According to Mr. Schoepf, from five to fifteen or twenty pounds; and unless the animal itself be about the weight of a hundred and fifty pounds, the shell is not worth much.

state, are committed to a strong press, by which means they are effectually joined or agglutinated. These are the methods also by which the various ornaments of gold, silver, &c. are occasionally affixed* to the tortoise-shell.

The Greeks and Romans appear to have been peculiarly partial to this elegant ornamental article, with which it was customary to decorate the doors and pillars of their houses, their beds, &c. &c. In the reign of Augustus this species of luxury seems to have been at its height in Rome.

“The Egyptians,” says Mr. Bruce, in the supplement to his travels, “dealt very largely with the Romans in this elegant article of commerce. Pliny tells us the cutting them for fineering or inlaying was first practised by Carvilius Pollio, from which we should presume, that the Romans were ignorant of the art of separating the laminæ by fire placed in the inside of the shell, when the meat is taken out: for these scales, though they appear perfectly distinct and separate, do yet adhere, and oftener break than split, where the mark of separation may be seen distinctly. Martial says, that beds were inlaid with it. Juvenal, and Apuleius in his tenth book, mentions that the Indian bed was all over shining with tortoise-shell on the outside, and swelling with stuffing of down within. The immense use made of it in Rome may be guessed at by what we learn from Velleius Paterculus, who says, that when Alex-

* It may be necessary to observe, that tortoise-shell is not capable of being melted, as vulgarly supposed.

andria was taken by Julius Cæsar, the magazines or warehouses were so full of this article, that he proposed to have made it the principal ornament of his triumph, as he did ivory afterwards, when triumphing for having happily finished the African war. This too, in more modern times, was a great article in the trade to China, and I have always been exceedingly surprised, since near the whole of the Arabian gulf is comprehended in the charter of the East-India Company, that they do not make an experiment of fishing both pearls and tortoises; the former of which, so long abandoned, must now be in great plenty and excellence, and a few fishers put on board each ship trading to Jidda, might surely find very lucrative employment with a long-boat or pinnace, at the time the vessels were selling their cargo in the port, and while busied in this gainful occupation, the coasts of the Red Sea might be fully explored."

It may be doubted, however, whether the species described and figured by Mr. Bruce, and said to inhabit the Red Sea, be the real *T. imbricata*; since it appears to differ in some respects from the usual character of this animal, and particularly in not having imbricated scales.

The *Testudo imbricata* has been figured by Seba, though not with that minute accuracy which might have been wished. Its shell has been well represented by Grew in his *Musæum Regalis Societatis*; but the most faithful, as well as elegant representation which has yet appeared

will be found on the plate annexed, which is taken from a drawing by the late Dr. Forster, and now preserved in the collection of Sir Joseph Banks, who politely permitted it to be engraved for the present publication.

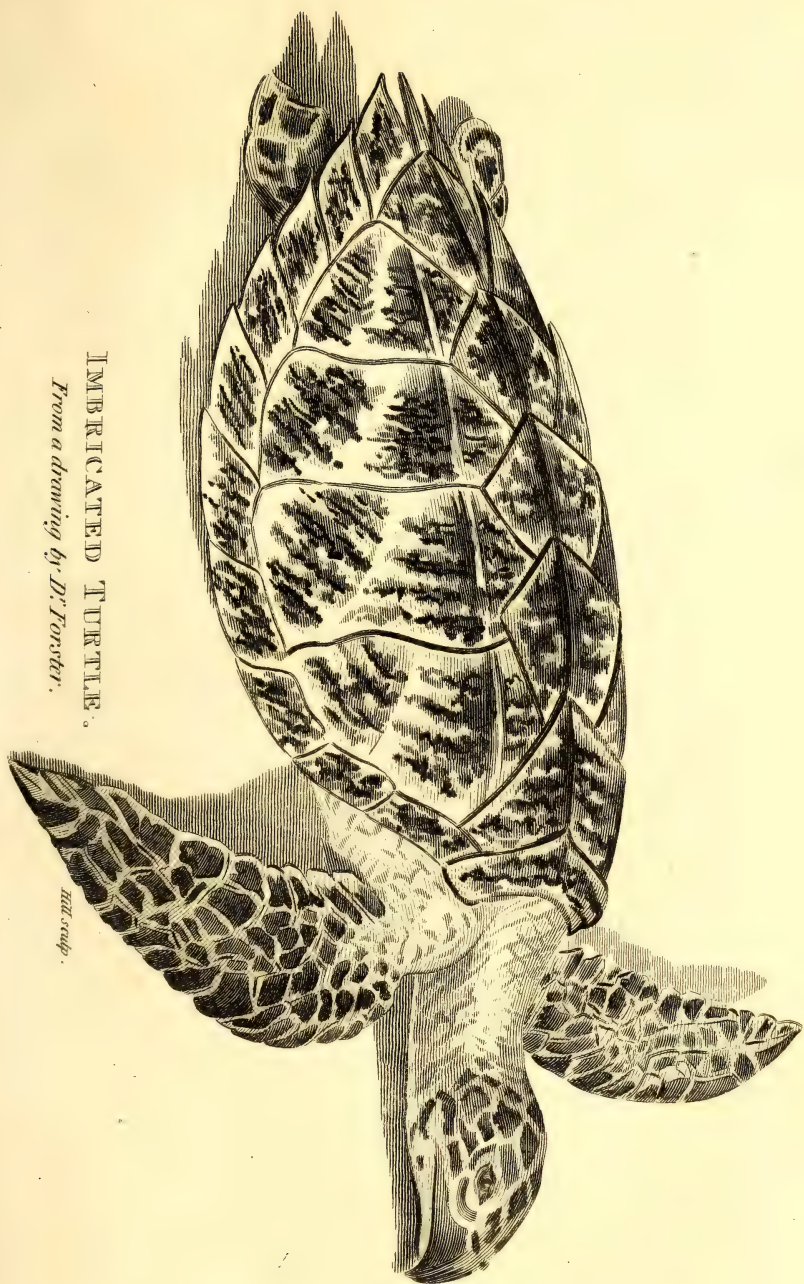
GREEN-SHELLED TURTLE.

Testudo testa variegata viridi.

Turtle with green variegated shell.

La Tortue Ecaillé-Verte. *Cepede Ovip. p. 92.*

THIS is so named by the Count de Cepede from the colour of its shell, which is naturally of a green cast, beautifully transparent, thin, and yet proper for a variety of ornamental purposes. The head is small and rounded; otherwise the animal resembles the common green turtle, or *Mydas*, in its general appearance, as well as in its manners, but never grows to so large a size, being commonly about a third part less. These turtles are said to be found in great quantities in the Southern Ocean, and about *Cape Blanco* in New Spain. They also occur in the Gulf of Mexico, and many of the large American rivers both above and below the line, but have never been discovered in the seas of the old continent. The flesh is said to be very delicate, and is even preferred in some places to that of the common turtle. Mons. Bomare is said by Cepede to have been the first describer of this species.



IMBRICATED TURTLE.

From a drawing by D. Forster.

tail sculp.



TRUNK TURTLE.

"THIS," says Catesby, "I never saw, but was told that they grow to a very large size, of a narrow form, but very deep, the upper shell being more convex than in other kinds of Turtle. Their flesh is rank, but affords a large quantity of oil, which is all they are valued for."

RHINOCEROS TURTLE.

La Tortue Nasicorne. *Cepede Ovip. p. 103.*

THIS, which seems not to have been yet described with sufficient accuracy by any naturalist, is said by the Count de Cepede to be a native of the American seas, and to bear a general resemblance to the common or green turtle, but is distinguished by having a large soft tubercle on the tip of the snout, in which are situated the nostrils. It is eaten in the same manner as the green turtle, and is chiefly found in the equatorial regions.

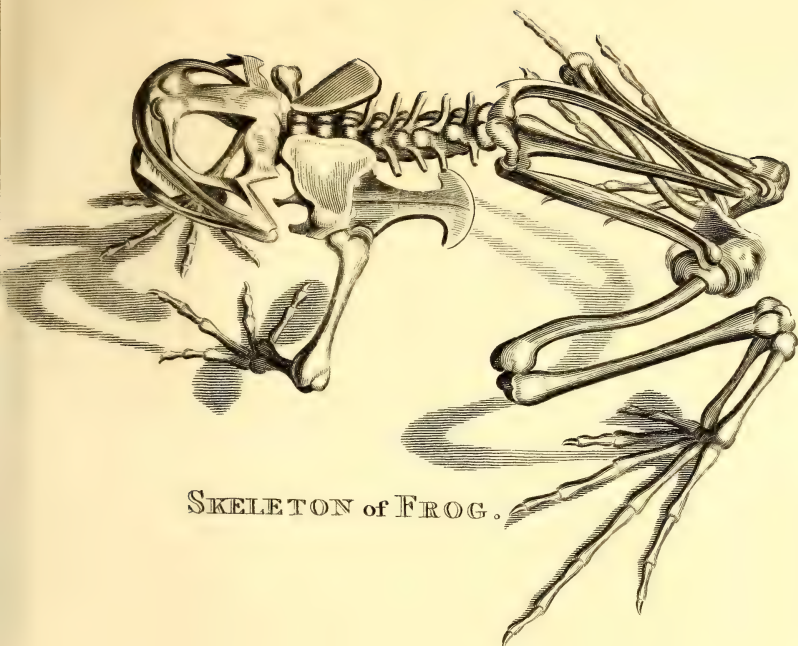
RANA. FROG.

Generic Character.

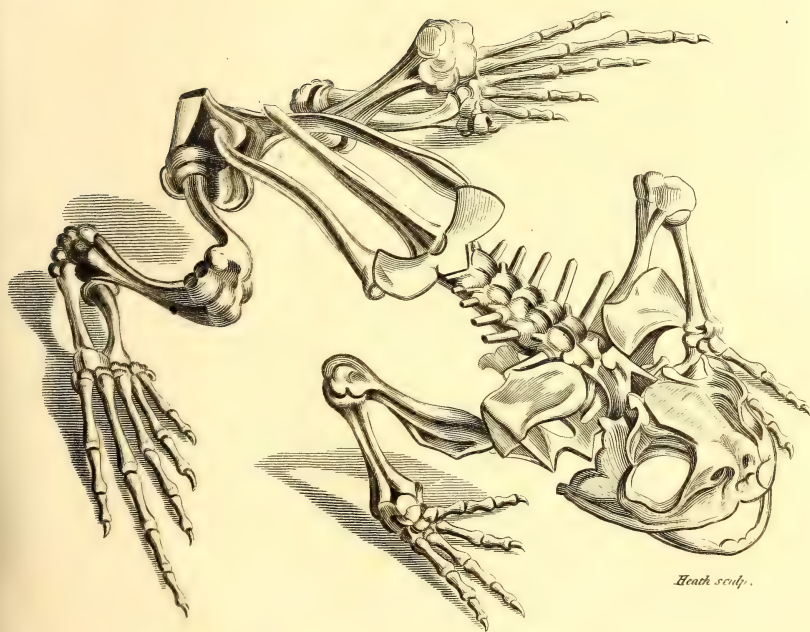
<i>Corpus</i> tetrapodum, ecaudatum, nudum.	<i>Body</i> four-footed, without tail, and naked, or without any integument but the skin.
---------------------------------------------	-------------------------------------------------------------------------------------------

THIS genus may be divided into three sections, viz. 1. Frogs, commonly so called, or *Ranae*, with light active bodies, and which leap when disturbed. 2. Slender-limbed Frogs, *Hylæ*, *Calamitæ*, or *Ranae arboreæ*, viz. such as have light bodies, very slender limbs, and toes terminating in flat, circularly expanded tips, enabling the animals to adhere at pleasure to the surface even of the smoothest bodies. Several of this division generally reside on trees, adhering by their toes to the lower surfaces of the leaves, and branches. 3. Toads, *Bufones*, or such as have large heavy bodies, short thick limbs, and which rather crawl than leap when disturbed.

It may be observed, that in the works of authors this division of the genus into three sections (which is but of late date) is not very accurately conducted; and indeed some species may be considered as of a doubtful cast, or ranking with almost equal propriety in either distribution.



SKELETON of FROG.



Heath sculp.

SKELETON of TOAD.

COMMON FROG.



COMMON FROG.

Rana Temporaria. *R. fusco-flavescens, nigro maculata, macula suboculari elongata fusca.*

Yellowish-brown Frog, spotted with black, with elongated brown patch beneath the eyes.

Rana temporaria. *R. dorso planiusculo subangulato.* *Lin. Syst. Nat. p. 357.*

Rana fusca terrestris. *Roes. Hist. Ran. p. 1. t. 1. &c.*

Rana. *Aldr. ovip. p. 89.*

Rana aquatica innoxia. *Gesn. aq. p. 805.*

Rana aquatica. *Raj. Quadr. p. 241.*

The Common Frog.

THIS is the most common of all the European species, being almost every where seen in moist situations, or wherever it can command a sufficient quantity of insects, worms, &c. on which it feeds. In colour it varies considerably, but its general tinge is olive-brown, variegated on the upper parts of the body and limbs with irregular blackish spots; those on the limbs being mostly disposed in a transverse direction: beneath each eye is a longish mark or patch, reaching to the setting on of the fore legs, and which seems to form one of its principal specific distinctions. The lower or under parts are of a pale greenish yellow cast, and much more obscurely spotted and variegated than the upper surface. The Frog, however, is not unfrequently seen, and more especially towards the close of summer, of a much brighter cast; being of a reddish or ferruginous rather than of an olive colour on the upper parts,

with very strong and vivid variegations of a deeper colour on the back and limbs, while the lower parts are yellow, spotted, and marked with light red. It is chiefly in gardens that the Frog is found thus coloured; but as this, like every other species, is in the habit of casting its skin frequently, the cuticle falling off in a somewhat irregular manner on different parts of the body, it of course varies considerably at intervals as to the brightness or intensity of its colours.

The form of the Frog is light and elegant, and its appearance lively; the limbs finely calculated for the peculiar motions of the animal, and the hind feet strongly webbed, to assist its progress in the water, to which it occasionally retires during the heats of summer, and again during the frosts of winter, when it lies in a state of torpidity, either deeply plunged in the soft mud at the bottom of stagnant waters, or in the hollows beneath their banks, till it is awakened from its slumber by the return of spring.

It is generally in the month of March that the Frog deposits its ova or spawn, consisting of a large heap or clustered mass of gelatinous transparent eggs, in each of which is imbedded the embryo, or tadpole, in the form of a round, black globule. The spawn commonly lies more than a month*, or sometimes five weeks, before the larvæ or tadpoles are hatched from it, and during this period each egg gradually enlarges in size, and a few days be-

* This time varies considerably, according to the heat of the weather and other circumstances.

fore the time of exclusion, the young animals may be perceived to move about in the surrounding gluten. When first hatched, they feed on the remains of the gluten in which they were imbedded, and in the space of a few days, if narrowly examined, they will be found to be furnished, on each side the head, with a pair of ramified branchiæ or temporary organs, which again disappear after a certain space. These tadpoles are so perfectly unlike the animals in their complete state, that a person in conversant in natural history would hardly suppose them to bear any relationship to the Frog; since, on a general view, they appear to consist merely of head and tail; the former large, black, and roundish; the latter slender, and bordered with a very broad transparent finny margin. Their motions are extremely lively, and they are often seen in such vast numbers as to blacken the whole water with their legions. They live on the leaves of duckweed and other small water-plants, as well as on various kinds of animalcules, &c. and when arrived at a larger size, they may even be heard to gnaw the edges of the leaves on which they feed; their mouths being furnished with extremely minute teeth or denticulations. The tadpole is also furnished with a small kind of tubular sphincter or sucker beneath the lower jaw, by the help of which it hangs at pleasure to the under surface of aquatic plants, &c. From this part it also occasionally hangs, when very young, by a thread of gluten, which it seems to manage in the same manner as some of the smaller slugs have been

observed to practise. Its interior organs differ, if closely inspected, from those of the future frog, in many respects; the intestines in particular are always coiled into a flat spiral, in the manner of a cable in miniature.

Indeed the anatomy of these animals exhibits so many singularities, that a volume might be filled with their history; but the nature of a work like the present forbids a detail of more than what is necessary for a clear general idea of the animal in its several states. When the tadpoles have arrived at the age of about five or six weeks, the hind legs make their appearance; gradually increasing in length and size; and, in about a fortnight afterwards, or sometimes later, are succeeded by the fore legs, which are indeed formed beneath the skin much sooner, and are occasionally protruded and again retracted by the animal through a small foramen on each side of the breast, and are not completely stretched forth till the time just mentioned. The animal now bears a kind of ambiguous appearance, partaking of the form of a frog and a lizard. The tail at this period begins to decrease; at first very gradually, and at length so rapidly as to become quite obliterated in the space of a day or two afterwards. The animal now ventures upon land, and is seen wandering about the brinks of its parent waters, and sometimes in such multitudes as to cover a space of many yards in extent. This is the phenomenon which has so frequently embarrassed the minds not only of the vulgar, but even of some superior

characters in the philosophic world; who, unable to account for the legions of these animals with which the ground is occasionally covered in certain spots, at the close of summer, have been led into the popular belief of their having descended from the clouds in showers.

As soon as the Frog has thus assumed its perfect form, it feeds no longer on vegetables, but on animal food; supporting itself on small snails, worms, &c. and particularly on insects. For the readier obtaining its prey, the structure of its tongue is extremely well calculated; being so situated that the root is attached to the fore rather than the hind part of the mouth; and, when at rest, lies backwards, as if the animal were swallowing the tip. By this means the creature is enabled to throw it out to some distance from the mouth, which is done with great celerity, and the bifid and glutinous extremity secures the prey, which is swallowed with an instantaneous motion, so quick that the eye can scarcely follow it.

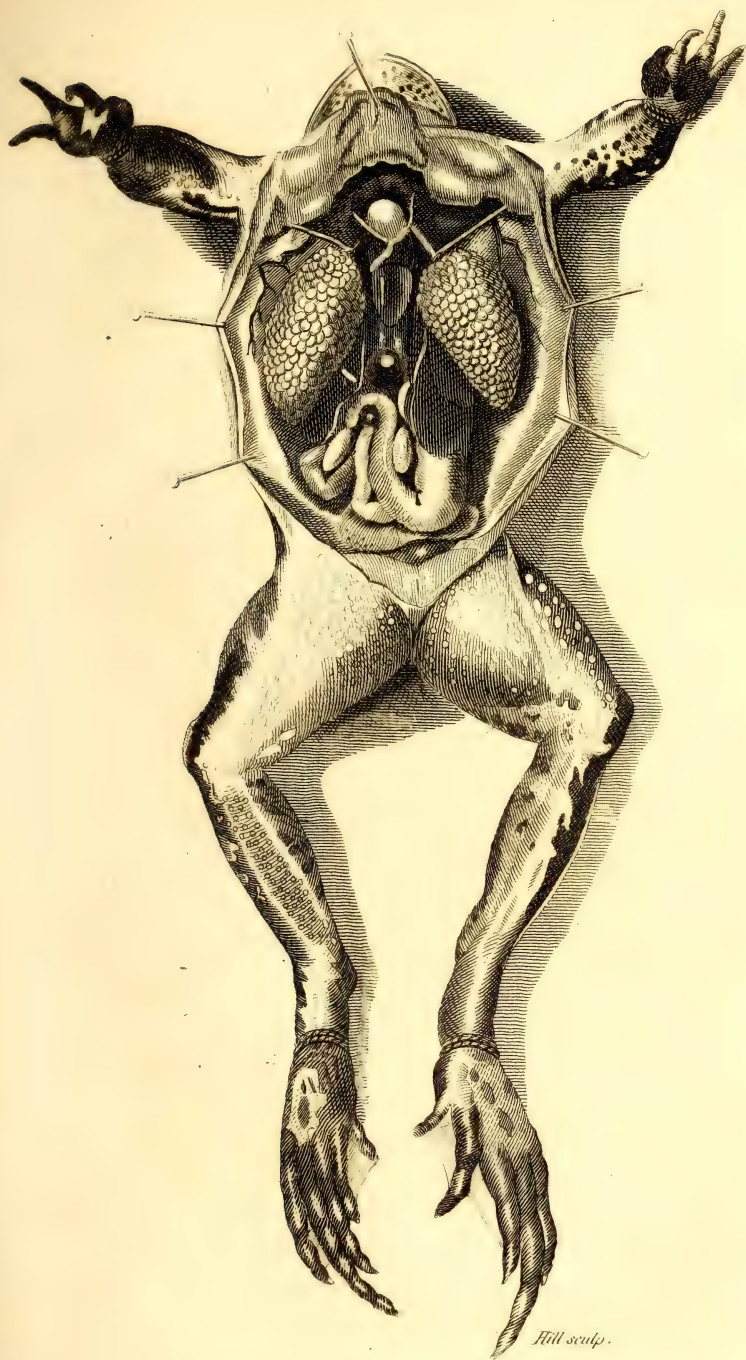
The Frog can hardly be said to arrive at its full size till the age of about five years, and is supposed to live at least twelve or fifteen years.

It is singular that the celebrated Lord Bacon seems not to have clearly understood the progress of Nature in the formation of the Frog, or its gradual change of figure from the tadpole to the complete animal; since, in his *Sylva Sylvarum*, or *Natural Historie*, he speaks, as an extraordinary and peculiar circumstance, of young frogs and toads having been sometimes observed with tails;

in such years as have been more than commonly pestilential or unhealthy; from whence he draws the conclusion, that the appearance of such tailed animals “argueth a great disposition to putrefaction in the soile and aire”!!!

The Frog is extremely tenacious of life, and, like other amphibia, will survive for a considerable space the loss of many of its organs. If confined entirely under water, it is still enabled to support its existence for several days, as appears by Sir Thomas Brown’s experiment. “Because many affirm, and some deliver, that, in regard it hath lungs and breatheth, a Frog may be easily drowned, though the reason be probable, I find not the experiment answerable; for fastening one about a span under water, it lived almost six days.” On the contrary, it cannot so well dispense with the want of water, and is unable to survive too long an exposure to a dry air and a hot sun. It is, therefore, particularly careful to secure a retreat where it may enjoy the benefit of shade and a sufficient supply of moisture. It delights, however, to bask occasionally, in a moderate sunshine, and is unable to support severe cold.

The figures on the annexed plate represent the animal in all its appearances, from the spawn to the completely formed Frog. The largest figure represents a Frog of about four years old; being considerably smaller than the animal when arrived at its fifth or sixth year. A plate representing a Frog in an opened state is also added, in order to shew the lungs and other viscera.



FROG.

Opened to shew the Lungs & other viscera.



Hill sculp.

GREEN FROG.

GREEN FROG.

Rana Esculenta. *R. olivacea nigro maculata, lineis tribus dorsalibus flavescentibus, abdomine albido.*

Olive-coloured Frog, spotted with black, with three yellowish dorsal lines, and whitish abdomen.

Rana esculenta. *R. corpore angulato, dorso transverse gibbo, abdomine marginato.* *Lin. Syst. Nat. p. 357.*

Rana viridis aquatica. *Roes. Hist. Ran. p. 53. t. 13, &c.*

Edible Frog. *Penn. Brit. Zool. 3. p. 13.*

The Green Frog.

THIS species is the largest of the European Frogs, and is found plentifully in France, Italy, Germany, and many other parts of Europe, but is a rare animal in England. In its general appearance it extremely resembles the common frog, but is of larger size, and of an olive-green colour, distinctly and strongly marked on the upper parts of the body with moderately large and somewhat rounded black spots or patches: the limbs are elegantly marked or barred transversely with bands of the same colour; and from the tip of the nose down the whole length of the back run three distinct stripes of pale yellow, the middle one of which is slightly depressed; the two lateral ones strongly elevated. The under parts of the body and limbs are of a pale or whitish colour, slightly tinged with green, and variegated with brown spots, and markings. The head is rather larger and sharper in proportion than that of the common Frog; and the long deep-brown patch under each eye, which forms so constant and con-

spicuous a character in that animal, is much less distinct, and sometimes even entirely wanting. The proportion of the limbs is nearly the same as in the common frog, and the hind feet are very strongly palmated.

This species, according to the observations of Mr. Roesel, emerges from its winter quarters at a much later period than the common Frog; generally depositing its spawn in the month of June. Mr. Roesel, therefore, very properly observes, that in places where this animal is used as an article of food, it should not be taken till June; those which are brought to market before that period being either common frogs, or even toads. The male of this species, during the breeding season, is observed to protrude from each side of its head a large inflated globular vesicle, and croaks so loud as to be heard to a vast distance. Indeed in places where these animals assemble in multitudes, their croaking is so oppressive to those unaccustomed to the sound, as to prevent them from enjoying their accustomed rest. The globules of spawn in this species are smaller in proportion than in the common frog, and of a somewhat yellowish cast: the tadpoles are slower in arriving at their complete form; the fore legs scarcely appearing before October, and the animal in its perfect shape being rarely seen before the beginning of November, at which period the tail begins to decrease, and in about four days becomes entirely obliterated.

The Green Frog is a very voracious animal, and will occasionally seize on young birds of various



PEEPING FROG.

kinds, mice, and even young ducklings which happen to stray too far from their parents; swallowing them whole, like the rest of its prey. It arrives at its full growth in about four years; begins to breed at the age of five years, and lives to about sixteen.

 PEEPING FROG.

Rana Pipiens. *R. olivacea, maculis ovatis nigris flavo marginatis.*

Olive-coloured Frog, with ovate black spots margined with yellow.

Water-Frog. *Catesb. Car. 2. p. 70. pl. 70.*

Rana pipiens. *R. viridis, ocellis plurimis fuscis annulo flavescente cinctis.* *Lin. Syst. Nat. Gmel. p. 1052. Schreb. Naturf. 18. p. 182. t. 4.*

Rana maculosa Africana amphibia. *Seb. 2. p. 37. t. 37. f. 4.?*

IN its habit or general appearance this species seems much allied both to the common and the green frog, and more particularly to the latter animal, but is smaller; measuring only five or six inches from the nose to the tips of the hind feet. It is a native of North America, and was first described by Catesby, who informs us that its body and limbs are of a dusky green, spotted with black: from the eyes to the rump extend two yellow lines; and two white lines reach from each eye to the nose: the eyes are large and black, and are encircled by yellow irides. These frogs, says Catesby, are not seen on dry land, but frequent rivulets and ditches of water, and will leap to the distance of five or six yards. Since the time of

Catesby this species has been described by Kalin, and other travellers. It is said to indicate the approach of rain by its piping voice, during the spring and beginning of summer. The ears in the living animal have a bright gilded tinge, or metallic gloss. A Frog much allied to the above, and perhaps a variety, is described and figured by Seba, vol. 2. p. 37. t. 37. but is said to be a native of Africa.

BULL FROG.

Rana Catesbeiana. *R. fusco-olivacea maxima nigro maculata, auribus ocellatis, pedibus posticis palmatis.*

Very large olive-brown Frog, spotted with black, with large ocellated ear-spots, and palmated hind feet.

The Bull Frog. *Catesb. Carol. 2. p. 72. pl. 72.*

Rana ocellata ??? *Lin. Syst. Nat. p. 356.*

THIS remarkable species is not uncommon in many parts of North America, where it is known by the name of the Bull Frog, its voice resembling the distant lowing of that animal. It grows to a very large size, the individual represented by Mr. Catesby, in his Natural History of Carolina, and which he assures us was taken from a small rather than a large specimen, seeming to measure about eighteen inches from the nose to the end of the hind feet. Its colour, on the upper parts, is a dusky olive, or brownish, somewhat irregularly marked with numerous deep-brown spots; while the under parts are of a pale or whitish cast, with a tincture of yellowish green, and marked with

BULL FROG.

*Fresh sculp.*

numerous spots, but much less vivid or distinct than those of the upper parts. The fore feet have only four toes, and are unwebbed, but the hind feet, which are large and long, have five toes, and are very widely webbed or palmated. The irides of the eyes are red, surrounded with a narrow border, or secondary iris, as it were, of yellow. The ears, or rather the external membranes of those organs, are large, round, of a brownish red colour, surrounded by a well-defined pale or yellowish white margin.

Mr. Catesby tells us that the Bull Frog is less numerous in North America than any other kind; that it frequents springs only, which in Virginia abound in the sides of every little hill, where by the continual running of the water a small pond or hole is usually made before the mouth of the spring, which is rarely without a pair of these frogs, which are usually seen sitting on the verge of the hole, and when surprised, with a long leap or two, enter the mouth of the spring, where they are secure. He adds, that it is the common belief of the people in Virginia that they keep the springs clean, and purify the water, and therefore the general prejudice is in their favour; though, on account of their being great devourers of young ducks and goslings, which they often swallow whole, they are sometimes destroyed.

It does not appear that Linnaeus has distinctly described this species, unless we suppose him to have really intended it by his *Rana ocellata*. If this be the case, we must admit, that by some very

extraordinary inaccuracy, he has confounded two widely different species together, in which he appears to have been followed by the Count de Ceppe. In the Gmelinian edition of the *Systema Naturæ* the trivial name of *ocellata* is retained.

ARGUS FROG.

Rana Ocellata. *R. pedibus pentadactylis fissis, digitis subtus tuberculatis, dorso fasciato, lateribus ocellatis.*

Frog with pentadactyle unwebbed feet, toes tuberculated beneath, back fasciated, and sides ocellated.

Rana Ocellata. *R. auribus ocellatis, pedibus muticis?* *Lin. Syst. Nat. p. 356. Mus. Ad. Fr. 2. p. 39.*

Rana maxima Virginiana, &c. *Seb. 1. p. 119. t. 75. fig. 1.*

Rana pentadactyla. *R. pedibus omnibus fasciatis pentadactylis, corpore venuloso; maculis dorsalibus transversis, lateralibus ocellatis.* *Lin. Syst. Nat. Gmel. p. 1052.*

THE present large and highly elegant species, which was first figured in the work of Seba, appears clearly, from the description given in the *Musæum Adolphi Friderici*, to be the real *Rana ocellata* of Linnæus; though, from the extreme brevity of the specific character in the *Systema Naturæ*, accompanied by an erroneous reference to a figure in Catesby, most readers have supposed the Bull Frog of that author to have been the animal intended.

The Argus Frog is a native of several parts of North America, being found in Pennsylvania, Carolina, &c. &c. residing, like most others, in moist situations, and in the neighbourhood of springs

ARGUS FROG.



Roth sculp.



and rivulets. It is one of the largest animals of the genus, equalling, if not exceeding, the Bull Frog in the size of its body, while the limbs are thicker and stouter in proportion. Its colour is a pale reddish brown, with two distinctly marked whitish elevated lines running down the middle of the back, at a considerable distance from each other; the intervening space being marked by several broad fasciæ of a reddish chesnut colour, while the sides are beautifully ornamented with several truly ocellated or eye-shaped spots of the same colour, each being half surrounded by an iris-like paler space or crescent. The limbs are elegantly banded with chesnut coloured stripes. The under parts are pale or whitish. The feet are unwebbed, and are all divided into five toes, each joint being furnished beneath with a kind of tubercle or process.

When we consider the wide difference in the form of the feet between this and the Bull Frog (in which the hind feet are perhaps more widely palmated than in any other animal of the genus), it appears altogether astonishing that the Count de Cépède, in his *History of Oviparous Quadrupeds*, should have considered them as the same species.

In the British Museum are preserved specimens of the Argus Frog, in which, though much faded by length of time, the pattern of the spots may still be pretty distinctly traced. In its general manners this animal is supposed to resemble the Bull Frog.

LINEATED FROG.

Rana Virginica. *R. cinerea, rubro maculata, subtus flavescens, dorso quinquestriato quinquangulari.* *Lin. Syst. Nat. Gmel.* p. 1053.

Cinereous Frog, spotted with red; yellowish beneath; with angular back marked by five pale stripes.

Rana Virginiana maculis et lineis notata. *Seb. 1. p. 120. t. 75. f. 4.*

THIS, which is allied in shape and size to the common European Frog, is of a greenish colour above, and paler beneath; the back and limbs being variegated with dark brown marks or patches of different sizes. The upper part of the body is of a somewhat angular form, being marked longitudinally by five pale or whitish lines, three of which run from the nose down the back, and the other two are disposed on each side the body, reaching no farther than the legs. The feet are formed as in the common frog; the fore feet being tetradactylous; the hinder pentadactylous and webbed. It is a native of Virginia, and is figured and slightly described in the work of Seba.

OVAL FROG.

Rana Ovalis. *R. subfusca, subtus flavescens, capite brevi rostrato cum corpore globoso confuso.*

Brownish Frog, yellowish beneath, with short rostrated head scarcely distinct from the globose body.

Rana ovalis. *Schneid. p. 131.*

DESCRIBED by Mr. Schneider from a specimen in the Museum of the Duke of Brunswick. Size not mentioned. Colour pale brown, yellowish beneath: hind legs short, with unwebbed feet, and a callus at the base of the inner toe: the snout projects beyond the lower jaw, and forms the character of the species: other specimens seen by Mr. Schneider are said to have been somewhat spotted above, and inclining in some degree to a blueish cast.

 STUDDED FROG.

Rana Cyanophlyetis. *R. fusco-cærulea, linea utrinque laterali tuberculata, abdomine albido fusco maculato.*

Brownish blue Frog, with a tuberculated line on each side; beneath whitish spotted with brown.

Rana Cyanophlyetis. *Schneid. Amph. p. 137.*

THIS is described by Mr. Schneider from specimens in the collection of Dr. Bloch. Its colour is a brownish blue above, and beneath white, thickly spotted with brown: the legs are banded with blackish-blue and white; and along the

whole length of the body, on each side, runs a row of blue tubercles or pustules, commencing from the eyes and meeting at the juncture of the hind legs: the upper jaw is beset with a row of longish, thick-set, conical teeth, resembling those of lizards: the hind feet are webbed, and furnished with a callus resembling a sixth toe. The size of the animal is not mentioned. It is a native of India.

SPINY-FOOTED FROG.

Rana Spinipes. *R. fusca, subtus cærulescens, lateribus gilvo punctatis, digitis anterioribus spinosis.*

Brown Frog, blueish beneath; with the sides speckled with ochre colour, and the toes of the fore-feet spiny.

Rana Australiaca. Australian Frog. *Naturalist's Miscellany*, vol. 6. pl. 200.

Rana Spinipes. *Schneid Amph.* p. 129. 139.

THIS was first described in the *Naturalist's Miscellany*; and so careful has Mr. Schneider been to preserve it from oblivion, that he has twice described it in his own work within the compass of a few pages. He is mistaken, however, in supposing it to exist in the British Museum; the figure having been etched from a drawing made in New Holland, its native country. Its size appears to be somewhat larger than that of the common European Frog, and its habit approaches rather to that of a toad, or a Natter-Jack, which latter it seems to resemble in its manner of walking,

viz. with the limbs elevated, or in the manner of the generality of quadrupeds. All the feet are unwebbed.

BLUE FROG.

Rana Cærulea. *R. cærulea, subtus griseo-punctata, pedibus tetradactylis, posterioribus palmatis.*

Blue Frog, speckled beneath with greyish; the feet divided into four toes; the hind feet webbed.

Blue Frog. *White's Journ. of Voy. to New South Wales, p. 248. pl. ib.*

THE above is mentioned in Mr. White's Voyage to New South Wales, and is said to be of the size of a common frog. Nothing particular is known of its natural history. In habit and slenderness of limbs it seems allied to the tree frogs, but the toes are not orbiculated.

VESPERTINE FROG.

Rana Vespertina. *R. macula inter oculos transversa, posterius bicruri aliisque oblique ab oculis ad nares, corpore supra cinereo maculis longitudinalibus subconfluentibus fuscis, viridi variantibus vario, subtus albido cinerascete inquinato.* *Lin. Syst. Nat. Gmel. p. 1050. Pall. it. 1. p. 458.*

Cinereous Frog, tuberculated above, with a transverse spot between the eyes, forked behind, and longitudinal subconfluent brown dorsal spots varying into green.

NATIVE of Siberia: about the size of a toad, but with the habit rather of a frog; but can scarcely be said to leap: head short; body covered with warts or papillæ.

 LAUGHING FROG.

Rana Ridibunda. *R. corpore fusco-maculato supra cinereo, linea dorsali flava vel subviridi, subtus albido glabro, clunibus fuscis lacteo maculatis.* *Lin. Syst. Nat. Gmel. p. 1051. Pall. it. p. 458.*

Cinereous Frog, with the body spotted with brown, and the thighs dusky, with milk-white spots.

VERY common, according to Dr. Pallas, about the rivers Volga and Ural, and about the Caspian sea: of very large size, weighing half a pound: has the habit of the common Frog, but is of a broader form: always keeps in the water; and in the evening exerts a voice much resembling a hoarse laugh.

THIRSTY FROG.

Rana Sitibunda. *R. supra ex glauco cinerascens, maculis ex viridante nigricantibus varia, subtus sordide alba, plantis semipalmatis subheptadactylis.* *Lin. Syst. Nat. p. 1051. Pall. it. 1. p. 458.*

Glaucous grey Frog, variegated with blackish green spots; beneath whitish, with the hind feet semipalmated and subheptadactyle.

NATIVE of desert places about the river Ural: conceals itself during the day: has the habit of a toad, but is larger: body warted; head short: two calli or spurious toes on the hind feet.

 LEVERIAN FROG.

Rana Leveriana. *R. fusco-cærulea, subtus albida, supra linea utrinque alba alteraque abrupta, pedibus posterioribus palmatis.*

Dusky-blue Frog, whitish beneath, with palmated hind feet, and body marked above by two long and two short white stripes.

HABIT of common Frog, but the body plumper and limbs shorter in proportion: colour above much resembling that of the *R. bicolor*, but rather deeper or more obscure: from behind each eye runs a white line or narrow stripe as far as the thighs; another shorter stripe runs from the nostrils over the edges of the upper lip as far as the fore legs: on the back of the head is a smallish trifurcated spot, the two upper divisions pointing forwards: under surface yellowish white, and

granulated; the granulations forming mottlings on the sides of the body: fore feet tetradactylous; the toes very slightly orbiculated at the tips: hind feet pentadactylous and pretty strongly palmated: shape of the head as in the common frog, and not like that of the bicolor: ears round and dusky. This species, though allied in some particulars to the bicolor and cyanophlyetis, seems yet to differ from both. Nothing is known relative to its history or native country.

FIRE FROG.

Rana Ignea. *R. olivaceo-fusca tuberculata, subtus aurantia cæruleo maculata.*

Olive-brown Frog; beneath orange coloured, spotted with blue.

Rana bombina. *R. corpore verrucoso, abdomine albido nigro maculato, plica gulari.* *Lin. Syst. Nat. p. 355.*

Rana abdomine fulvo. *Lin. Faun. Succ. ed. 1. p. 94.*

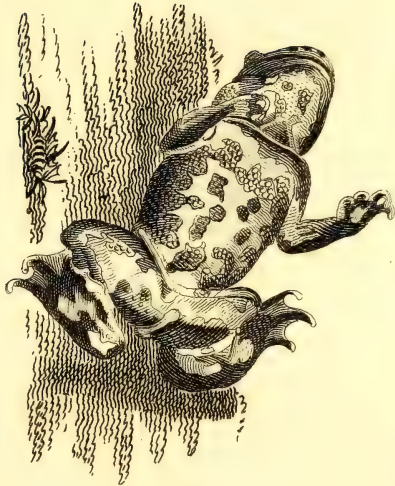
Bufo vulgo igneus dictus. *Roes. Hist. Ran. p. 97. t. 22.*

Rana Bombina. *R. abdomine aurantio cæcio-maculato, pupilla triquetra.* *Lin. Syst. Nat. Gmel. p. 1048. Blumenb. Naturg. p. 260.*

La Sonnante. *Cepede ov. 1. p. 553. pl. 37.*

Le couleur de Feu. *Ib. p. 595.*

THIS species I place in the present division of the genus, rather than among the toads, on account of its depositing its ova in clustered heaps; not in long strings of gluten, like those animals. It is the least of all the European Frogs, hardly



Hyalinobatrachium.

FIRE FROG.

ever equalling even the tree frog in size, and is a native of Germany, Italy, and many other parts of Europe, but is not found in England. Its colour on the upper parts is a dull olive brown; the skin being marked with large and small tubercles; round the edges of the mouth is placed a row of blackish streaks or perpendicular spots. The under parts both of the body and limbs are orange-coloured, spotted or variegated with irregular markings of dull blue. It is from the colour of the under surface that this species has obtained its title of *Bufo igneus*, Fire Frog, &c. The colour, however, as in most others of the genus, is liable to vary considerably, being sometimes much less brilliant. This animal may be considered rather as an aquatic than terrestrial species; being rarely found on land, but chiefly inhabiting turbid stagnant waters, in which, in the month of June, it deposits its spawn, the ova being much larger in proportion than in most others of the genus. The tadpoles are hatched towards the end of June, and are of a pale yellowish-brown colour; and when young are often observed to hang from the surface of leaves, &c. by a glutinous thread proceeding from the small tube or sucker beneath the lower lip. They arrive at their full size towards the close of September, and at that period are remarkable for the fleshy or muscular appearance of the tail, which is stronger in proportion than in most other tadpoles. About the beginning of October they assume their complete or ultimate

form; and when the tail has so far decreased as to be still about a quarter of an inch in length, that remaining portion becomes entirely obliterated in the space of about twelve hours.

The Fire Frog is a lively, active animal; leaping and swimming with equal, or even superior celerity to the common Frog. When surprised on land, or unable to escape, it squats close to the ground; at the same time turning back its head and limbs in a singular manner; and if farther teized or irritated, evacuates from the hinder part of the thighs a kind of saponaceous frothy fluid, of no bad scent, but which in some circumstances has been found to excite a slight sensation of acrimony in the eyes and nostrils. This species is observed to breed at the age of three years, and may be supposed to live about ten; but this is not entirely ascertained.

The pupil of the eye in this animal is round in the shade, but in a full light triangular: the lobes or cancellated internal divisions of the lungs, are larger or fewer in proportion than in other frogs. Its voice, according to Roesel, is sharper or lighter than in other frogs; less disagreeable, and in some degree resembling a kind of laugh: according to some authors, however, it rather resembles the tone of a bell, or the note of a Cuckow; for which reason the animal has been called *Rana bombina*. The male only is vocal.

From the different descriptions of authors relative to the colour, voice, and other particulars,

has arisen much confusion, with respect to the species*.

SALINE FROG.

Rana Salsa. *R. olivaceo-fusca, subtus albida fusco maculata, digitis omnibus fissis.*

Olive-brown Frog, whitish beneath, with dusky variegations, and with all the toes unwebbed.

Bufo salsus. *Shrank. Naturg. Br. über. Oestreich, &c. 1. p. 308.*

THIS species appears to be much allied to the preceding, but differs not only in colour, but in having the hind feet webbed, which in the former are widely palmated. Its colour is olive brown above, and whitish beneath, with dusky variegations, and with the insides of the feet yellow. When first taken out of the water the brown colour has a blueish cast: the legs are fasciated with brown, and the back is beset with tubercles. It is an inhabitant of salt marshes in some parts of Germany.

* The wretched figure of this animal in the work of the Count de Ceppe, like many others in that publication, must be considered as merely introduced for form's sake.

PARADOXICAL FROG.

Rana Paradoxa, *R. femoribus posticis oblique striatis*. *Lin. Syst. Nat.* p. 356.

Yellowish olive-coloured Frog, variegated with rufous marks, and with the hind legs obliquely striated.

Paradoxical Frog. *Nat. Miscell.* vol. 9. pl. 350, 351.

Larva, or Tadpole.

Lacerta cauda ancipiti, palmis tetradactylis fissis, plantis pentadactylis palmatis, abdomine ventricoso. *Lin. Syst. Nat. ed. 6.* p. 36.

Rana piscis. *Lin. Mus. Ad. Frid.* 1. p. 49.

Seb. 1. p. 123. t. 78. f. 15—21.

Mer. Sur. t. 71. f. 1—5.

Frog Fish of Surinam. *Edw. Phil. Trans.* 51. p. 653. pl. 15.

Edw. Mem. p. 30. pl. 2.

THIS animal, which the plate represents in its natural size, from a very fine specimen in the British Museum, is a native of South America, and seems to be more particularly found in Surinam than in other parts. In its general form it very much resembles the *Rana temporaria*, or common European Frog; and is, when living, of a yellowish olive colour, spotted and variegated on the body and limbs with rufous or yellowish brown; the principal mark of distinction from others of the genus being the somewhat oblique longitudinal stripes on the hind legs: the fore feet have only four toes, and are unwebbed; but the hind feet have five, and are very deeply palmated to the very ends or tips of the toes; and near the thumb



PARADOXICAL FROG.

Hill sculp.

or shortest toe is an oblong callus, resembling an additional or spurious toe. The upper jaw is beset with a row of small denticulations; and the male is, according to Mr. Schneider, furnished with a gular vesicle, as in some of the European species.

The tadpole of this Frog, from its very large size, the strong and muscular appearance of the tail, and the ambiguous aspect which it exhibits in the latter part of its progress toward its complete or ultimate form, has long continued to constitute, as it were, the paradox of European naturalists; who, however strong and well-grounded their suspicions might be relative to its real nature, and the mistake of most describers, were yet obliged, in some measure, to acquiesce in the general testimony of those who had seen it in its native waters, and who declared it to be at length transmuted, not into a frog, but a fish! and it was even added by some, that it afterwards reverted to its tadpole form again!! That it is really no other than a frog in its larva or tadpole state, will be evident to every one who considers its structure; and more especially, if it be collated with the tadpole even of some European Frogs; for instance, that of the *Rana alliacea*, which the reader will find represented in its natural size on a plate accompanying the description of that species. Like our European tadpoles, this animal, according to the more or less advanced state in which it is found, is furnished either with all the four legs, or with only the two hinder ones; it also sometimes happens that in the

largest sized of these tadpoles, exceeding perhaps the length of six or eight inches, the hind legs alone appear; while in those of far smaller size both the fore and hind legs are equally conspicuous. Specimens of these curious animals occur both in the British and Leverian Museums.

It will readily appear that the larva of this frog is larger in proportion to the complete animal than in any other species hitherto discovered. It may also be not improper to observe, that perhaps all the specimens of these very large tadpoles occurring in Museums, may not be those of the *Rana Paradoxa* in particular, but of some other American, African, or Asiatic Frogs, as the *R. ocellata*, *marina*, &c. &c.

Dr. Gmelin, in his edition of the *Systema Naturæ*, seems to suppose that the fleshy part of the tail in this larva still remains after the animal has acquired its complete form; but this is by no means the case; no vestige of that part being visible in the perfect Frog.



ZEBRA FROG.

Hyla zebra.

HYLÆ,

OR

Frogs with rather slender bodies, long limbs, and the tips of the toes flat, orbicular, and dilated.

ZEBRA FROG.

Rana Zebra. R. rufo-flavescens, fusco fasciata & maculata; cruribus fasciis geminatis, pedibus palmatis.

Yellowish rufous Frog, spotted and fasciated with brown; with doubled fasciæ on the legs, and palmated feet.

Rana maxima. R. pedibus omnibus palmatis & cum digitis fasciatis, corpore venuloso variegato: summo dorso oblique maculato.

Lin. Syst. Nat. Gmel. p. 1053. Laur. Amph. p. 32.

Rana Virginiana exquisitissima. Seb. 1. p. 115. t. 72. f. 3.

Rana boans. Lin.?

THIS appears to be by far the largest of all the Hylæ, or slender-bodied Frogs, and is, according to Seba, a native of Carolina and Virginia. Its colour is an elegant pale rufous brown, beautifully marked on the back and limbs, and even to the ends of the toes, with transverse chesnut-coloured bands, which on the limbs are double and much more numerous than on the back: from the corners of the mouth run two very narrow pale lines, as in the Argus Frog, separating, as it were, the region of the back from the other parts; the head and sides are irregularly marked with numerous small chesnut-coloured spots and veins: all the feet are webbed, and the tips of all the toes are orbicular, as in the rest of this parti-

cular tribe: the fore feet are tetradactylous, and the hind pentadactylous: the head is large in proportion, the eyes protuberant, and the mouth wide. The specimen figured by Seba measures about five inches from the nose to the end of the body.

VAR. ?

Rana Boans. *R. pallida, rufo marmorata, pedibus anterioribus subpalmatis, posterioribus palmatis.*

Pale Frog, marbled with rufous, with the fore feet subpalmated, the hind feet palmated.

Rana boans? *R. corpore lævi, subtus punctis contiguis, pedibus palmatis unguibus orbiculato-dilatatis.* *Lin. Syst. Nat. p. 358.*

Rana Surinamensis. *Seb. 1. p. 114. t. 71. fig. 3? 4?*

THIS appears to differ so slightly from the above, that it seems doubtful whether it should not be considered as a variety, rather than as specifically distinct. The size and general markings are similar, but the fore feet are not webbed; or at least not very distinctly. May it not constitute a sexual difference?

VAR. ?

Rana Venulosa. *R. pallida, fusco venoso-maculata, pedibus fissis.*

Pale Frog, veined and spotted with brown, with unwebbed feet.

Rana Virginiana altera. *Seb. Mus. 1. p. 115. t. 72. f. 4.*

THIS appears to be no other than a younger or less advanced specimen of the former animal; differing only in being much smaller, less regularly and beautifully marked, and having no apparent

webs to the feet. It is said by Seba to be a native of the same parts of North America as the former.

Rana Squamigera!!!

Lin. Syst. Nat. Gmel. p. 1055. Walbaum Schrift. der Berl. Ges. 5. p. 223.

THE laborious description of this supposed species, given by Mr. Walbaum in the work above referred to, is a most curious instance of one of those learned errors which sometimes creep into the writings of celebrated naturalists; the whole, according to Mr. Schneider, having originated from the accidental adhesion of a strip of skin, from some serpent or lizard, preserved in the same bottle, to the back of the frog.

“Vix credibile videbitur, quod tamen liquido veluti juratus ex accurata ejusdem exempli inspectione ad Blochium meum transmissi affirmare audeo, ranam squamigeram a Wallbaumio operose descriptam nihil aliud esse, nisi ranam boantem Linnæi, cui cum serpentibus aut lacertis permixtæ, in liquore spirituosio lacinia exuviarum serpentinarum et quidem inversa se forte applicuerat. Iuvabit data occasione recordari chordæ ovis bufonis refertæ a Gmelino juniore in tertio Itinerarii volumine pro tæniæ specie pictæ!”—*Schneid. Hist. Amph. fasc. 1. p. 168.*

BLUE-AND-YELLOW FROG.

Rana Bicolor. *R. supra cærulea, subtus ochracea, pedibus fissis, digitis orbiculato-dilatatis.*

Blue Frog, ochre-coloured beneath, with unwebbed feet, and flattened orbicular toes.

Rana bicolor. *R. supra cærulea, subtus ochracea.* *Lin. Syst. Nat. Gmel. p. 1052. Boddaert Monogr. 1772.*

Blue and yellow Frog. *Naturalist's Miscellany, vol. 10. pl. 367.*

THIS is a moderately large species; the body measuring rather more than four inches in length. The whole upper surface, both of body and limbs, is of an elegant blue colour: the under parts are of a pale orange or rather ochre colour; and along the sides are disposed several oblong and round, slightly convex, glandular white spots or pustules: the head is large; the mouth wide; and the tip of the nose truncated or abruptly terminated: the fore feet have four and the hind feet five toes, all terminated by a large orbicular tip; and beneath every joint of the toes is a process or tubercle. Different specimens appear to vary somewhat in their colours, the blue being more intense, and the orange-colour of the lower parts deeper; the limbs are also sometimes tinged with purplish bands or shades: the lower part of the abdomen is marked with numerous whitish round granules.

The female has more of the violet cast on the upper parts than the male, and the whitish marks on the side, &c. are more conspicuous.

This elegant species is supposed to be a native of Surinam.

It is surprising that the Count de Cepede should consider it as a variety of the European Tree-Frog.

WHITE-LEAF FROG.

Rana Leucophyllata. *R. rufa*, *supra maculis niveis polymorphis variata.*

Rufous Frog, variegated above with differently shaped snow-white spots.

Rana leucophyllata. *Schneid. Amph. p. 168.*

THIS is described by Mr. Beyreis, in the Transactions of the Berlin Academy, vol. 4. p. 178. Its colour is rufous above, variegated both on the body and limbs with milk-white spots, which in different specimens are observed to vary very much, both in number, form, and disposition. All the toes of the fore feet are slightly webbed at the base. It is a native of America.

FOUR-LINED FROG.

Rana Quadrilineata, *R. cærulea*, *linea utrinque laterali gemina flava.*

Blue Frog, with a double longitudinal yellow line on each side the body.

R. Quadrilineata. *Schneid. Amph. p. 169.*

DESCRIBED by Mr. Schneider, from a drawing communicated by Dr. Bloch. Bears a resemblance to the *leucophyllata*; is of a blue colour above,

with a double yellow line along each side of the body, from the eyes to the vent.

VAR. ?

MR. SCHNEIDER mentions what seems to be a variety of a liver-colour, and thickly scattered over with small granules: two white lines on the sides: hind feet webbed.

 CHESNUT FROG.

Rana Castanea. *R. castanea granulata, subtus albida, lineâ utrinque laterali alba.*

Chesnut-coloured granulated Frog, whitish beneath, with a white line on each side the body.

Rana lineata. *Schneid. Amph. p. 138.*

R. fusca. *Ib. p. 130.*

THIS is twice, perhaps three times, described by Mr. Schneider, viz. first, under the name of *fusca*, and, again, under that of *lineata*. It also seems very doubtful whether the liver-coloured variety of the preceding species may not be the same animal. The size is not mentioned: the colour is rufous brown, with a white line running from each nostril across the eye-lids, and along each side of the body to the hind legs: the whole upper surface, both of body and limbs, scattered over with very minute warts or tubercles: colour of the belly whitish, with small clear white spots: on each shoulder a large, long, white spot: fore arms, hind

legs and thighs, barred transversely with white: all the feet unwebbed, with rounded toes, and all the joints tuberculated or processed beneath. Supposed to be a native of Surinam.

FASCIATED FROG.

Rana Fasciata. *R. rufescens, albido transversim fasciata.*

Rufescent Frog, with whitish transverse bands.

R. fasciata. Schneid. *Amph.* p. 172.

OF a pale rufous colour; the head, body, and upper parts of the limbs, marked with pale transverse bands: hind feet webbed as far as the first joint: all the toes processed beneath: belly and under parts of the thighs much granulated: eyes blue, with a silvery lustre: outside of the arms and legs blackish brown. In the collection of the Duke of Brunswick.

TREE FROG.

Rana Arborea. *R. viridis, subtus albida, linea laterali nigricante, abdomine granulato, pedibus fissis.*

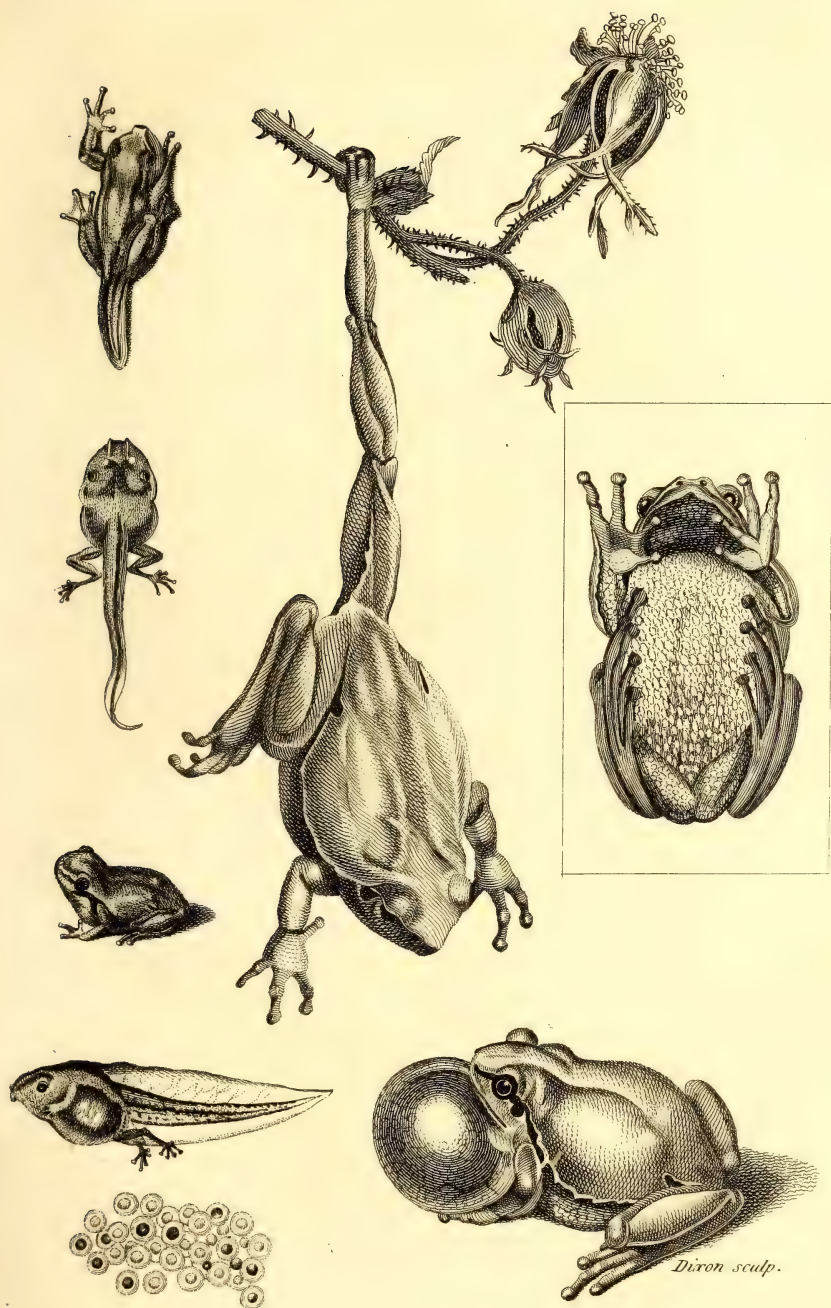
Green Frog, whitish beneath, with blackish lateral line, granulated abdomen, and unwebbed feet.

Rana arborea. *R. corpore lævi, subtus punctis contiguis tuberculato, pedibus fissis, unguibus orbiculato-dilatatis.* *Lin. Syst. Nat. p. 357.*

Rana arborea. *Roes. Hist. Ran. p. 37. pl. 9, &c.*

The Tree Frog.

IN the beauty of its colours, as well as in the elegance of its form, and agility of its movements, the Tree Frog exceeds every other European species. It is a native of France, Germany, Italy, and many other European regions, but is not found in the British islands. Its principal residence, during the summer months, is on the upper parts of trees, where it wanders among the foliage in quest of insects, which it catches with extreme celerity, stealing softly toward its prey in the manner of a cat towards a mouse, and when at the proper distance, seizing it with a sudden spring, frequently of more than a foot in height. It often suspends itself by its feet, or abdomen, to the under parts of the leaves, thus continuing concealed beneath their shade. Its size is smaller than any other European frog, except the Fire Frog. Its colour, on the upper parts, is green, more or less bright in different individuals: the abdomen is whitish, and marked by numerous granules: the under surface of the limbs is red-



Dixson sculp.



dish, and the body is marked on each side by a longitudinal blackish or violet coloured streak, separating the green of the upper parts, from the white colour of the lower: the inferior edge of this dark lateral stripe is tinged with yellow. The body is smooth above, and moderately short or plump: the hind legs are very long and slender: the fore feet have four and the hind feet five toes, all of which terminate in rounded, flat, and dilated tips, the under surface of which, being soft and glutinous, enables the animal to hang with perfect security from the leaves of trees, &c. The skin of the abdomen is also admirably calculated by nature for this peculiar power of adhesion, being covered with small glandular granules in such a manner as to fasten closely even to the most polished surface: and the animal can adhere at pleasure to that of glass, in whatever position or inclination it be placed, by merely pressing itself against it.

Though the Tree Frog inhabits the woods during the summer months, yet on the approach of winter it retires to the waters, and there submerging itself in the soft mud, or concealing itself beneath the banks, remains in a state of torpidity, and again emerges in the spring, at which period it deposits its spawn in the waters, like the rest of this genus. The male at this period inflates its throat in a surprising manner, and exerts a very loud and sharp croak, which may be heard to a vast distance. The spawn is deposited about the end of April, in small clustered masses; the inclosed globules or embryos being of a pale

yellowish brown colour. The tadpoles become perfect Frogs, by the total decay of the tail, about the beginning of August; and soon begin to ascend the neighbouring trees, where they continue to reside during the remainder of the warm season; as do likewise the parent animals, after the breeding season is past. During their residence among the trees they are observed to be particularly noisy on the approach of rain; so that they may be considered, in some measure, as a kind of living barometers; more especially the males, which, if kept in glasses, and supplied with proper food, will afford an infallible presage of the changes of weather. In the German *Ephemerides Naturæ Curiosorum* we meet with an account of one which was kept in this manner for the space of seven years. It does not appear that the natural residence of this frog in the waters, during the winter, and in spring, was observed before the time of Roesel; and it is remarkable that Klein, in his objections to the Linnæan arrangement of the Amphibia, appears to imagine that the Tree Frog never inhabits the water.



Bornfield sculp.

MERIAN FROG.

MERIAN FROG.

Rana Meriana. *R. subflavescens fusco variegata, vesicis auricularibus subconicis.*

Yellowish-green Frog, variegated with brown, with subconical auricular vesicles.

Rana Americana vesicaria. *Seb. Mus. 1. t. 71. f. 1, 2, 3?*

Eared Frog. *Merian Surin. pl. 56.*

Rana arborea maxima. *Sloan Jam.*

THIS, which in the Gmelinian edition of the *Systema Naturæ* is placed among the supposed varieties of the *Rana arborea*, or common Tree Frog, must, if any reliance be placed on the figures and descriptions of Madam Merian and Seba, be a very distinct species. Indeed the very circumstance of its having the hind feet webbed, would alone be sufficient, if other circumstances were wanting, to prove it entirely distinct. It appears to be nearly thrice the size of the *Rana arborea*, and is of a greenish brown above, variegated by several differently formed spots, veins, and patches of yellowish green; and on each side of the neck is a very remarkable protuberance, resembling an obtusely conical, inflated pouch. The figures of Seba and Merian, though slightly differing as to the minuter circumstances of the exact distribution of spots and colours, agree in this particular; and the description given by Sloane, in his *History of Jamaica*, expressly mentions this feature. This animal is sometimes found on trees, and sometimes in the water; according to the different periods of its

growth, &c. &c. Madam Merian's figure being taken, as she informs us, from the living animal, is here introduced in preference to those of Seba. It is observable, however, that the hind feet in this figure appear but slightly palmated; whereas, in Seba's representation, they are strongly webbed. Madam Merian's figure is accompanied by the larvæ or tadpoles in their different stages of growth. She informs us, that the frogs are found in stagnant waters; that they have ears in their heads, and knobs or balls on their feet, which Nature has given them in order to enable them to pass with facility over the morassy places they inhabit.

ORANGE FROG.

Rana Aurantia. *R. aurantia, corpore artubusque gracillimis.*

Orange-coloured Frog, with very slender body and limbs.

Rana Brasiliensis gracilis. *Seb. 1. t. 73. f. 3.*

THIS species is a native of South America, and is of a smaller size than the European Tree Frog, slender-bodied, long-limbed, and entirely of a reddish orange colour. Like the rest of this division, it inhabits trees.

TINGING FROG.

Rana Tinctoria. *R. rufa, corpore albo fasciato.*

Reddish Frog, with the body fasciated with white.

La Rouge. *Cepede ovip. p. 566. pl. 39.*

SMALLER than the European Tree Frog. Native of South America. Of a red or very bright ferruginous colour above, marked with a pair of longitudinal white stripes, which in the younger specimens are often crossed by a transverse stripe. It is a species which varies considerably in the disposition of its colours. It inhabits trees, and is said to be sometimes used by the South American Indians for the purpose of introducing new colours on green parrots, which, while yet young, are plucked on particular parts, and afterwards well rubbed or anointed on the bare spots with the blood of this Frog; in consequence of which, as is pretended, the new feathers on those parts spring of a red or orange-colour instead of green; thus varying the bird with parti-coloured plumage. The specimen of this Frog described and figured by Cepede had the stripes on the body rather yellow than white; so that it probably varies in the colour as well as the disposition of its marks.

WHITE FROG.

Rana Alba. *R. tota alba.*

Frog entirely of a white colour.

Hyla lactea. *Laurenti Specim. Med. p. 34.*

La Couleur de Lait. *Cepede ovip. 1. p. 561.*

THIS small species is a native of the warmer parts of North America, where, like others of this tribe, it inhabits woods. It is entirely of a white colour, with a few spots or patches on the upper parts of a brighter or clearer white than the ground-colour. It is said sometimes to vary; the ground-colour having a slight plumbeous or cinereous cast.

 BILINEATED FROG.

Rana Bilineata. *R. viridis, linea utrinque longitudinali flava.*

Green Frog, with a strait yellow line on each side the body.

Tree Frog. *Catesb. Car. 2. p. 71. pl. 71.*

THIS is figured by Catesby, and has generally been considered as, at most, a variety of the common or European Tree Frog, from which it scarce seems to differ, except in having the yellow line on each side the body somewhat straiter, or without those undulations which take place in the former animal. It inhabits woods, and is extremely common in the warm and temperate parts of North America.

The following somewhat doubtful or not well-determined species are mentioned by Mr. Schneider, in his publication on the Amphibia.

PUNCTATED FROG. *Rana Punctata*.

COLOUR whitish grey, with small, irregular, snow-white specks on the head and back, and a snow-white band from the eyes to the hind legs: gape running beyond the eyes: abdomen and thighs beneath thickly beset with calli or papillæ: body very thin near the thighs. Mr. Schneider speaks of a drawing of this species, which represented it of a brown colour, instead of grey; so that the colour of the first described specimen might, perhaps, have been changed by being preserved in spirits.

BLACK-STRIPED FROG. *Rana Melanorabdata*.

AMONG some drawings executed in Brasil by the command of Prince Maurice of Nassau, preserved in the Royal Library at Berlin, this species occurs, but unaccompanied by either name or description. The head and back are green, with transverse black bars. Perhaps, says Mr. Schneider, it may be the same with a Frog described by Marcgrave, under the name of *Rana arborea mediocris magnitudinis, tota ex flavo albicans superius, at inferius per totum lutei coloris: crura postica medietate inferiore etiam lutei coloris, sed transversim lineis nigris variegata, ut et latera ventris*.

Among some drawings by Madam Merian, in

the British Museum, is a Frog which seems much allied to the above. Its size is that of a small or half-grown common frog, and its colour a bright green above, and pale or whitish-brown beneath; the sides of the body and insides of the limbs bright yellow, beautifully marked with pretty numerous transverse, jet-black streaks and patches; each of the thighs having a pale line running down the middle of the inner part: the fore feet have four, and the hind five toes, all unwebbed, and without claws, except the two exterior toes of each hind foot, which are represented with sharpish curved claws.

TOADS.

COMMON TOAD.

Rana Bufo. R. fusca, tuberculis rufescentibus, subtus pallida.

Brown Toad, with rufous-brown tubercles; pale beneath.

Rana corpore ventricoso verrucoso lurido fuscoque. Lin. Syst.

Nat. p. 354.

Bufo terrestris, dorso tuberculis exasperato, oculis rubris. Roes.

Hist. Ran. p. 85. t. 20.

Bufo s. Rubeta. Raj. Quadr. 252.

OF all the European Toads this seems to be the most universally known; at least, in its complete or perfect form. It is found in gardens, woods, and fields, and frequently makes its way into cellars, or any obscure recesses in which it may occasionally conceal itself, and where it may find a supply of food, or a security from too great

COMMON TOAD.



Arnold's sculp.

a degree of cold. In the early part of spring, like others of this genus, it retires to the waters, where it continues during the breeding season, and deposits its ova or spawn in the form of double necklace-like chains or strings of beautifully transparent gluten, and of the length of three or four feet, in each of which are disposed the ova in a continued double series throughout the whole length, having the appearance of so many small jet-black globules or beads; being in reality no other than the tadpoles or larvæ convoluted into a globular form, and waiting for the period of their evolution or hatching, which takes place in the space of about fourteen or fifteen days, when they break from the surrounding gluten, and, like the tadpoles of frogs, swim about in the water, and are nourished by various animalcules, gluten, leaves of water-plants, &c. &c. till, having arrived at their full growth, the legs are formed, the tail gradually becomes obliterated, and the animals leave the water, and betake themselves to the surface of the ground. This generally happens early in the autumn, at which period it is not uncommon to find such numbers of the young animals in some particular places, that their appearance has frequently given rise to the vulgar idea of their having being showered from the clouds.

The Toad is an animal too well known to require any very particular description of its form; and the figure accompanying this article will perhaps be more impressive than any verbal de-

tail. It may be necessary to observe that it is always covered by tubercles, or elevations on the skin, of larger or smaller size in different individuals, and that the general colour of the animal is an obscure brown above, much paler and irregularly spotted beneath. The Toad, however, is occasionally found of an olive cast, with darker variegations; and in some specimens, more especially in the earlier part of summer, the shoulders and limbs are marked with reddish spots, while a tinge of yellow often pervades the under parts both of the limbs and body.

The Toad arrives at a considerable age; its general term of life being supposed to extend to fifteen, or even twenty years; and Mr. Pennant, in his *British Zoology*, gives us a curious account, communicated by a Mr. Arscott, of Tehott, in Devonshire, of a Toad's having lived, in a kind of domestic state, for the space of more than forty years, and of having been, in a great degree, tamed, or reclaimed from its natural shyness or desire of concealment; since it would always regularly come out of its hole at the approach of its master, &c. in order to be fed. It grew to a very large size, and was considered as so singular a curiosity, that even ladies, laying aside their usual aversion and prejudices, requested to see the favourite Toad. It was, therefore, often brought to table, and fed with various insects, which it seized with great celerity, and without seeming to be embarrassed by the presence of company. This extraordinary animal generally re-

sided in a hole beneath the steps of the house door, fronting the garden; and might probably have survived many years longer, had it not been severely wounded by a raven, which seized it before it could take refuge in its hole, and notwithstanding it was liberated from its captor, it never again enjoyed its usual health, though it continued to live above a year after the accident happened.

The Toad was formerly supposed to be a great enemy to the Spider; or rather the Spider to the Toad. On this subject a tale is told by Erasmus, so completely absurd, so curiously ridiculous, that it may well serve as a standard proof of the general ignorance which prevailed at that less enlightened period.

“*Monachus quidam, &c. &c.*” *Erasm. de Amicitia.*

The tale is thus translated by Topsel:

“There was a Monk, who had in his chamber divers bundles of green rushes, wherewithal he strowed his chamber at his pleasure: it happened on a day after dinner, that he fell asleep upon one of those bundles of rushes, with his face upward, and while he there slept, a great Toad came and sate upon his lips, bestriding him in such a manner as his whole mouth was covered. Now when his fellows saw it they were at their wit’s end*, for to pull away the Toad was an unavoidable death, but

* And that, seemingly, *no very long tether!* to use an expression of the facetious Dr. Baynard.

to suffer her to stand still upon his mouth was a thing more cruel than death : and therefore one of them espying a spider's web in the window, wherein was a great spyder, he did advise that the Monk should be carried to that window, and laid with his face upward right underneath the spyder's web, which was presently accomplished. And as soon as the Spyder saw her adversary the Toad, she presently wove her thread, and descended down upon the Toad, at the first meeting whereof the Spyder wounded the Toad, so that it swelled, and at the second meeting it swelled more, but at the third time the Spyder kild the Toad, and so became grateful to her Host which did nourish her in his Chamber."

"The antipathy between a Toad and a Spider," says Sir Thomas Brown, "and that they poisonously destroy each other, is very famous, and solemn stories have been written of their combats, wherein most commonly the victory is given unto the Spider. Of what Toads and Spiders it is to be understood would be considered ; for the *Phalangium* and deadly Spiders are different from those we generally behold in *England*. However the verity hereof, as also of many others, we cannot but desire ; for hereby we might be surely provided of proper antidotes in cases which require them ; but what we have observed herein, we cannot in reason conceal ; who having in a glass included a toad with several spiders, we beheld the spiders without resistance to sit upon his head, and pass over all his body, which at last, upon

advantage, he swallowed down, and that in a few hours, to the number of seven. And in like manner will Toads also serve bees, and are accounted enemies unto their hives."

From the experiments of Laurenti, it appears that small lizards, on biting the common Toad, were for some time disordered and paralytic, and even appeared to be dead, but in some hours were completely recovered.

It is also observed, that dogs, on seizing a toad, and carrying it for some little time in their mouth, will appear to be affected with a very slight swelling of the lips, accompanied by an increased evacuation of saliva; the mere effect of the slightly acrimonious fluid which the toad on irritation exsudes from its skin, and which seems, in this country at least, to produce no dangerous symptoms in such animals as happen to taste or swallow it. The limpid fluid also, which this animal suddenly discharges when disturbed, is a mere watry liquor, perfectly free from any acrimonious or noxious qualities, and appearing to be no other than the contents of a peculiar reservoir, common to this tribe, destined for some purpose in the economy of the animals which does not yet appear to be clearly understood. The common Toad may therefore be pronounced innoxious, or perfectly free from any poisonous properties, at least with respect to any of the larger animals; and the innumerable tales recited by the older writers, of its supposed venom, appear to be either gross exaggerations, or else to have related to the effects of

some other species mistaken for the common Toad; it being certain that some of this genus exsude from their skin a highly acrimonious fluid.

The Toad is, however, looked upon with great aversion by the major part of mankind, and it must be confessed, that its appearance is not captivating: yet the eyes are remarkably beautiful; being surrounded by a reddish gold-coloured iris, the pupil, when in a state of contraction, appearing transverse.

It might seem unpardonable to conclude the history of this animal without mentioning the very extraordinary circumstance of its having been occasionally discovered enclosed, or imbedded, without any visible outlet, or even any passage for air, in the substance of wood, and even in that of stone or blocks of marble. For my own part, I have no hesitation in avowing a very high degree of scepticism as to these supposed facts, and in expressing my suspicions that proper attention, in such cases, was not paid to the real situation of the animal. That a Toad may have occasionally latibulized in some part of a tree, and have been in some degree overtaken or enclosed by the growth of the wood, so as to be obliged to continue in that situation, without being able to effect its escape, may perhaps be granted: but it would probably continue to live so long only as there remained a passage for air, and for the ingress of insects, &c. on which it might occasionally feed; but that it should be completely blocked up in any kind of stone or marble, without either food or air, appears

entirely incredible, and the general run of such accounts must be received with a great many grains of allowance for the natural love of the marvellous, the surprise excited by the sudden appearance of the animal in an unsuspected place, and the consequent neglect of minute attention at the moment, to the surrounding parts of the spot where it was discovered *.

* On this subject a curious experiment was made by Mons. Herrissant of the French Academy, in consequence of an assertion, that in the year 1771, on pulling down a wall at a seat belonging to the Duke of Orleans, and which had been built forty years, a living toad had been found in it; its hind feet being confined or imbedded in the mortar. Mr. Herrissant, therefore, in the presence of the Academy, inclosed three toads in as many boxes, which were immediately covered with a thick coat of plaister or mortar, and kept in the apartments of the Academy. On opening these boxes eighteen months afterwards, two of the toads were found still living: these were immediately reinclosed; but on being again opened some months after, were found dead. These experiments are, perhaps, not very conclusive; and only appear to prove what was before well known, viz. that the Toad, like many other Amphibia, can support a long abstinence, and requires but a small quantity of air: but in the accounts generally given of toads discovered in stones, wood, &c. the animals are said to have been completely impacted or imbedded, and without any space for air.

ALLIACEOUS TOAD.

Rana Alliacea. R. pallida, fusco marmorata, linea dorsali albida, pupillis perpendicularibus.

Pale-grey Toad, marbled with brown, with a whitish dorsal line, and perpendicular pupils.

Bufo aquaticus, allium redolens, maculis fuscis. Roes. Hist. Ran. p. 69. t. 17, 18.

THIS species appears to have been first described by the incomparable Roesel, who found it in the neighbourhood of Nurenberg. In its general form it much resembles the common toad, but the head is rather longer in proportion. The whole animal is also nearly smooth, or almost void of those protuberances with which the skin of the former is marked. Its colour on the upper parts is a brownish grey, deeper or lighter in different individuals, and marbled with variously-sized spots or patches of deep brown, which on the sides are so disposed as to form a kind of reticular appearance; and in some specimens a few small spots of red or orange colour are dispersed over the shoulders and sides. The under parts are of a pale grey or whitish colour. The eyes are remarkable for having the pupil, when contracted, of a perpendicular form, as in the eyes of cats, and not horizontal, as in others of this genus. The spawn, which in the common toad is deposited in the form of double chains or strings of gluten, consists, in this species, of a single string, of considerable thickness, in which the ova are extremely numerous, and

ATTACQUE'S TOAD



Rana lessonae.



TADPOLES of ALLIACEOUS TOAD.



disposed in a confluent manner through the whole length of the spawn, instead of being placed in two rows, as in the common species. This string of spawn sometimes equals almost two feet in length, being purposely shortened in the annexed engraving, in order to bring it within the compass of the plate.

Another remarkable character in this animal, and which gives rise to its name, is, that it diffuses, on being disturbed, an extremely strong odour, resembling that of garlick or onions, and which has the same effect on the eyes of those who examine and handle it; and sometimes a smell resembling that of the smoke of gunpowder seems to be combined with the former.

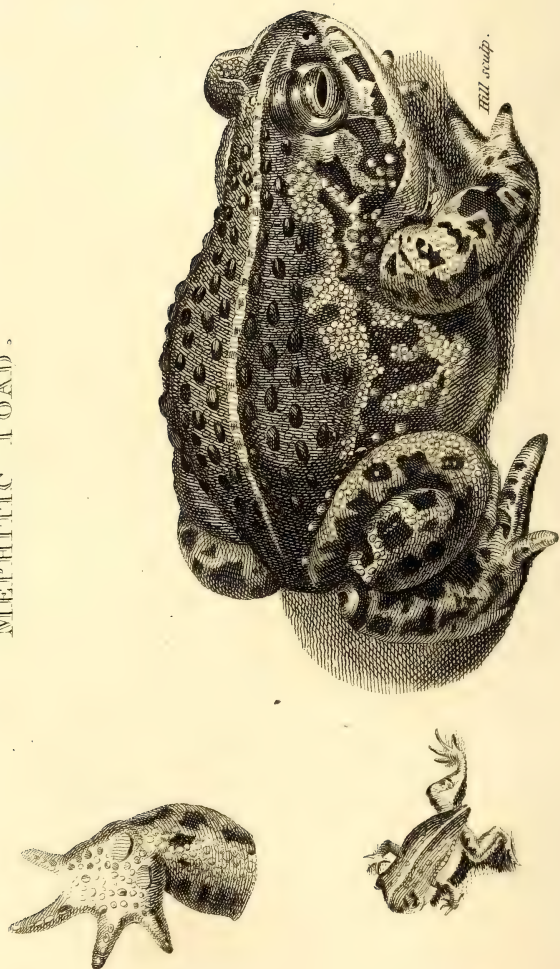
The tadpole or larva of this species arrives at so large a size, before it obtains its complete form, that, according to Roesel, it is considered by the country people in the neighbourhood where it is found as a kind of fish, and is eaten accordingly. It also serves as a good illustration of the long-continued error in natural history, relative to the South American species of Frog, called *Rana Paradoxa*, the tadpole of which, as the reader has already seen under that article, is larger in appearance than the complete animal, and has, in consequence of its size, been considered as a kind of fish, and described in many works on natural history under the name of the Frog-Fish of Surinam. The tadpole of the present species, in a similar manner, exceeds the size of the young frog in its complete state; nor is this circumstance peculiar

to these frogs alone, but seems, in a greater or less degree, to run through the whole genus ; the soft, pulpy, and dilated form of the full-grown tadpole generally appearing larger than that of the newly-formed frog. These tadpoles are extremely voracious, and if kept in glasses of water, and fed with lettuce leaves and other vegetables, may be heard while in the act of eating, to the distance of several feet.

This species seems to have been in a great degree unknown before the time of Roesel. It is an inhabitant of the waters, and but rarely appears on land, which is one principal cause of its having been so little attended to. The common Toad, on the contrary, is rarely found in the water, except during the breeding season, when it frequents stagnant waters in order to deposit its ova. The Alliaceous Toad is also of a much more lively and active nature ; its motion being sometimes rather a kind of leaping than crawling pace ; and on the hind feet is a sort of spurious claw or horny callus, situated beneath the heel, and which is not to be found in the common Toad.



MEPHITIC TOAD.



Tail wrap.

MEPHITIC TOAD.

Rana Mephitica. *R. olivacea, fusco maculata, verrucis subrubentibus, linea dorsali sulphurea.*

Olive Toad, spotted with brown, with reddish warts, and sulphur-coloured dorsal line.

Bufo terrestris foetidus. *Roes. Hist. Ran. p. 106. t. 24. f. 1.*

Rana Rubeta?? *Lin. Syst. Nat. p. 37.*

THIS species extremely resembles the common Toad in its general appearance, but is somewhat smaller, and is of an olive colour above, and pale grey beneath: the skin, all over the upper parts, is very distinctly tuberculated, and is marked by a pale sulphur-coloured line or narrow band, running down the whole length of the back: the sides are strongly tinged with yellowish red, in the form of an undulated fascia, beneath which are some irregular dark spots: the outsides of the limbs are also marked irregularly with dusky or blackish-brown spots: the eyes are of a glaucous green colour, slightly tinged with red: the body and limbs are very short and thick, and the fore feet are furnished beneath with a pair of bony tubercles or processes, by the help of which, as well as by pressing the body close to any substance, so as to exclude the air, this animal is enabled to climb to a considerable height up the sides of walls, &c. which it often does, in order to discover a convenient place of retirement. The hind feet are perfectly void of any webbed appearance; whereas those of the common Toad are pretty

deeply palmated. In its pace it differs from the rest of the toad tribe; running, nearly in the manner of a mouse, with the body and legs somewhat raised. It is chiefly a nocturnal animal; lying hid by day in the cavities of walls, rocks, &c. &c. The male and female perfectly resemble each other. They breed in June, resorting, at that time, to the waters, to deposit their ova, which are excluded in double rows in a pair of long strings of gluten, in the same manner as the common Toad; and so speedy is the evolution of the ova, that the tadpoles liberate themselves from the spawn in the space of five or six days. This happens about the middle of June; and about the end of August the hind legs appear, which, in a certain space, are succeeded by the fore legs; and by September and October the animals appear in their complete form.

Roesel informs us, that this species is known in some parts of Germany by the name of *Roerhling*, or Reed-Frog, from its frequenting in spring time such places as are overgrown with reeds, where it utters a strong and singular note or croak. When handled or teized, it diffuses an intolerable odour, resembling that of the smoke of gunpowder, but stronger: this proceeds from a whitish acrimonious fluid, which it occasionally exsudes from its pores. The smell in some degree resembles that of orpiment, or arsenic in a state of evaporation, and sometimes the animal can ejaculate this fluid to the distance of three or four feet, which, if it happen to fall on any part of the room where the

creature is kept, will, according to Roesel, be perceived two months afterwards*.

To this species of Toad the following singular narrative, recorded by Boerhaave, may be supposed to refer :

“ I lately read a wonderful history relative to the efficacy of odours. Two mountebanks contending for the preference of their Orvietan or antidote, had a promise from the magistrate of a licence or privilege to him whose antidote appeared by experiment to perform the most. The trial was therefore begun by taking poisons themselves. The first day each took the poison from his adversary, and each used his particular Orvietan or antidote; nor did the one or the other suffer any injury. On the next day, when they returned to their former calling, without any manifest hurt, the one told his adversary that he ought not any longer to contend with him, for that he had a kind of poison which resisted the efficacy of any antidote: but the other intrepidly defied him, and denied the fact. A drum was therefore brought, which was continually beat with sticks, and his adversary ordered to draw air from thence through his nose; to which he rashly consented, and immediately perished; for his more crafty ad-

* This is the less surprising, when we consider the effect of several other animal odours. The caterpillar of the *Phalæna Cossus* or Goat Moth, if kept, when full grown, in a chamber, for a short time, will have the same effect, and even a tin box in which it has been confined for some time, will retain the disagreeable odour for several months.

versary had included toads and vipers in the drum, which, being put into a rage by the beating and trembling of the instrument, breathed out a poisonous vapour, which manifestly exerted its virulence upon the seat of life itself; namely, the brain !!!”

VAR.?

Natter-Jack. *Brit. Zool.* 3. p. 18.

To the above animal seems greatly allied the species known in some parts of England by the name of the Natter-Jack, and which is thus described in the British Zoology:

“This species frequents dry and sandy places: it is found in *Putney Common*, and also near *Reevesby Abby, Lincolnshire*, where it is called the *Natter-Jack*. It never leaps, neither does it crawl with the slow pace of a toad, but its motion is liker to running. Several are found commonly together, and, like others of the genus, they appear in the evening.

“The upper part of the body is of a dirty yellow, clouded with brown, and covered with porous pimples, of unequal sizes: on the back is a yellow line. The under side of the body is of a paler hue, marked with black spots, which are rather rough. On the fore feet are four divided toes; on the hind feet five, a little webbed. The length of the body is two inches and a quarter; the breadth one and a quarter: the length of the

fore legs one inch one sixth; of the hind legs two inches."

In the above account no mention is made of any particular odour diffused by the animal on being disturbed; so that it remains doubtful whether it be the same with the mephitic toad before described, or not.

GREEN TOAD.

Rana Viridis. *R. pallida, maculis subviridibus variata, verrucis rubellis aspersa.*

Pale Toad, varied with greenish spots, and reddish tubercles.

Rana variabilis. *R. colorem varians, dorso et lateribus gibbis verrucis in centro fulvescentibus, dorsi medii excilibus, in prominentissima hypochondiorum parte majoribus.* *Lin. Syst. Nat. Gmel. p. 1051. Pall. Spic. Zool. p. 1. t. 6. f. 3, 4.*

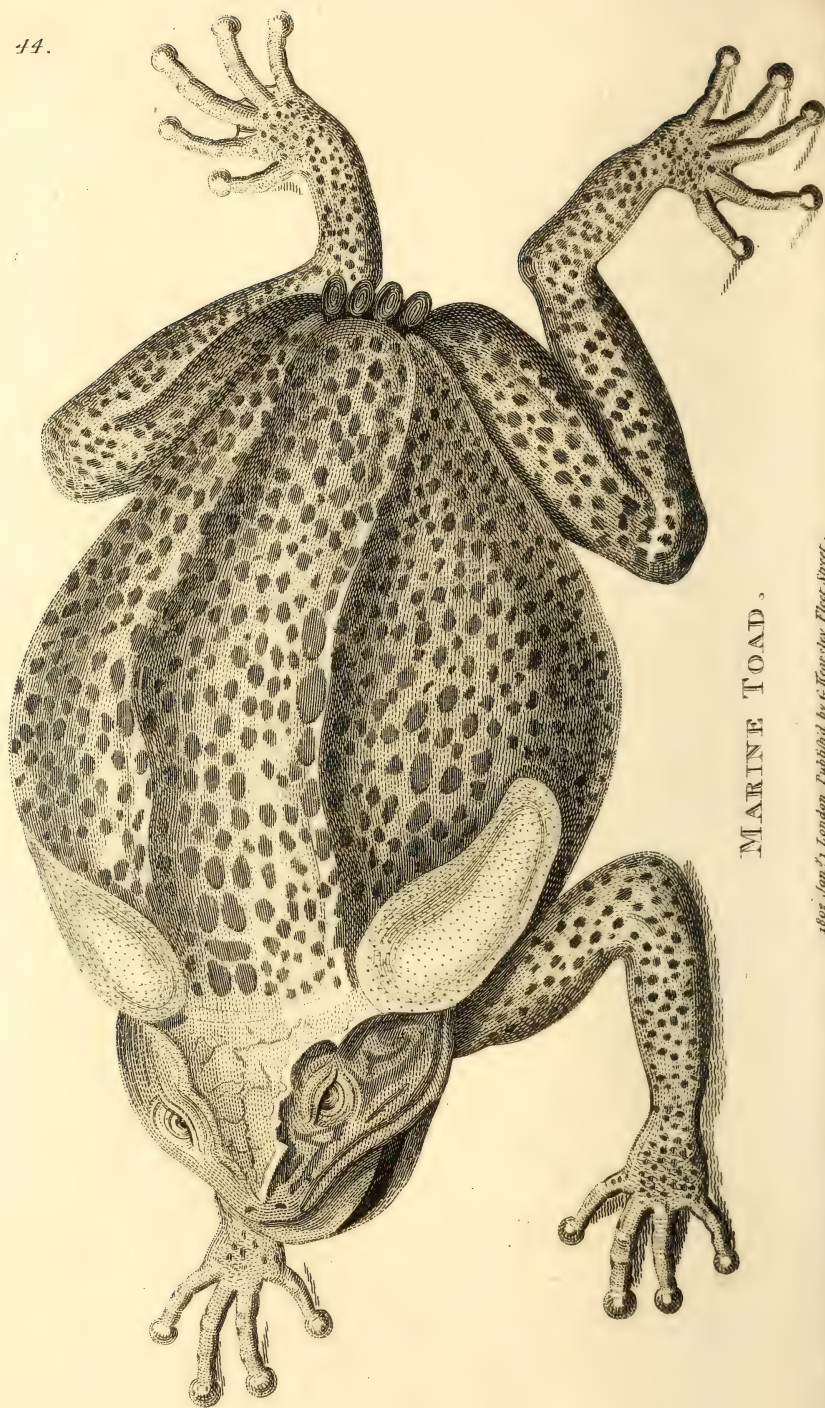
Bufo Schreberianus. *Laurent. Amph. p. 27.*

Bufo viridis. *Schneider Hist. Amph. p. 200.*

THE Green Toad is a native of Germany and some other parts of Europe, and seems to have been first described by Valisneri, and afterwards by Laurenti, who informs us that it inhabits the cavities of walls about Vienna, and is distinguished by its greenish and confluent spots on the upper parts, disposed on a pale or whitish ground, and scattered over with tubercles, pretty much in the manner of the *Calamita*, or Mephitic Toad. Each of the green spots or patches is also bounded by a blackish margin, and the whole pattern has a somewhat rudely geographical or map-like appearance: on the legs and thighs the spots are

rather transverse, so as to form a kind of bars : the abdomen is of a pale or lurid colour : the tubercles are on some parts reddish, and on others green : the eyes are of a beautiful gold-colour, and seem, when the animal is irritated, to flash with a kind of phosphoric light. The odour of this species is very strong ; resembling that of the common black or garden nightshade, but much more powerful, so as to fill a whole room. The female is of a browner cast than the male.

In winter this species retires under ground, and, like others of the genus, frequents the waters at the breeding season. It appears to vary occasionally in its colours ; the ground-colour being sometimes pale carnation. Its voice is said to resemble in some degree the creaking of a door hinge. Laurenti informs us, that the smaller kinds of grey lizard (*Lacerta agilis*. *Var.*) on biting this toad, immediately become strongly convulsed, and die in the space of a few minutes ; their tails continuing very strongly convulsed for a considerable time after all motion has ceased in the other parts. Its size is smaller than that of the common toad. Dr. Pallas describes it in his *Spicilegia Zoologica* under the title of *Rana variabilis*, or the Varying Toad ; the general colour being described as whitish, and that of the spots green ; but when placed in a hot sunshine becoming entirely grey ; when sleeping the spots alone appearing grey ; and, lastly, when torpid, the general tinge being a flesh colour.



MARINE TOAD.

1807. Jan. 2. London. Engraved by C. Hawley Fleet Street.

The body.

MARINE TOAD.

Rana maxima fusco-flavescens verrucosa, gibbere utrinque humerali magno poris pertuso.

Very large yellowish-brown Toad, with a large porous prominence over each shoulder.

Rana scapulis gibbosis, chnibus nodosis. Lin. Syst. Nat. p. 356.

Rana scapulis singulis scuto punctato, corpore lemniscis convexis rotundis tectis, ano quadrifido. Laurenti Spec. Med. p. 31.

THIS is a very large species; equalling, if not exceeding, the Bull Frog in size, and is of a pale brown colour, lighter beneath, and is marked all over, except on the head, with small, oval, chestnut-coloured tubercles: the head is smooth and veined with a few slight reticular marks, and from the nostrils to the shoulders, and thence down each side the back, run a pair of paler lines, as in many others of this genus. On each shoulder, as it were, or beyond the head, is a large and somewhat oval eminence or projecting part, of a light brown colour, and marked with numerous distinct pores. These parts are, in reality, as Mr. Schneider has observed, no other than the parotid glands, which are more or less protuberant in all Toads, but which in this seem more than commonly conspicuous, and may therefore be allowed to constitute a part of the specific character. The feet are destitute of webs, and the toes, which are four on the fore feet, and five on the hind, have a slightly orbicular termination, and are furnished with short claws, resembling the human nails in miniature:

the toes of the hind feet are very slightly connected at their base by a small approach towards a web. Seba calls this species a Marine American Frog, and observes, that it seems calculated for living both by land and sea; but gives no particular account of its native place. Linnæus appears to have described it merely from Seba's figure, and Mr. Schneider, in his *Historia Amphibiorum*, censures both the Linnæan and Laurentian specific characters, as depending on a circumstance common to all Toads, viz. the tuberos or prominent parotids; but since, as before observed, those parts are remarkably conspicuous in the present animal, there seems to be no good reason why they should not be particularized in the specific character*. As to the tubercles at the extremity of the body, they are evidently, as Mr. Schneider has well observed, entirely owing to the natural folding of the skin in that part, when the animal is placed in the attitude represented by Seba; and disappear when the legs are placed in a different direction.

Specimens of this animal, examined by Mr. Schneider, appeared to agree in every respect with Seba's figure, except in not having the tips of the toes visibly orbiculated. Mr. Schneider also speaks of a specimen of double the usual size, which he

* I must farther observe, that I have not pursued Mr. Schneider's arrangement in the disposition of this genus; but have placed some animals among the toads, which he would rank among the frogs, and vice versa.

saw in the collection of Dr. Bloch, and which appeared to resemble this species, but was entirely pale, or colourless.

DOUBTFUL TOAD.

Rana Dubia. *R. fusco-flavescens verrucosa, gibbere utrinque humerali magna porosa, pedibus posticis subhexadactylis subpal-matis.*

Yellowish-brown verrucose Toad, with a large porous prominence over each shoulder, and subhexadactyle subpalmated hind feet.

Rana musica ?? *R. humeris gibbis punctatis.* *Lin. Syst. Nat.* p. 354.

OF this animal a specimen is preserved in the British Museum, under the title of *Rana musica*: its size is that of a common toad, but the shape of the body differs; seeming gradually to decrease from the shoulders to the hind legs, somewhat in the manner of the *Hylæ* or tree frogs. Its colour, so far as can be determined from the specimen, long preserved in spirit of wine, appears to have been a moderately deep brown above, and pale or whitish beneath, slightly marbled or variegated with brown. The whole upper surface is beset with distinct oval pustules or tubercles, somewhat resembling those of the *Rana marina* of Seba; to which, indeed, the animal appears allied by the very large size of the prominent parts on each side the shoulders, or parotids, as Mr. Schneider chuses to call them, which are extremely tumid, and appear perforated by numerous

distinct pores. The under parts of the body are granulated, or beset with tubercles of a much smaller kind: the outsides of the thighs are covered with slightly muricated or pointed warts. The feet are formed like those of the common Toad: the fore feet being unwebbed, and consisting of four toes, with pretty distinct claws or callous tips: the joints of the toes are also tuberculated beneath; and under the foot are two very remarkable calli, or protuberances, as in those of the *R. mephitica*: the hind feet are webbed towards the base, in the same manner as in the common Toad; and may rather be said to have six than five toes; the exterior side of each being furnished with a kind of spurious joint or blunt callous claw: the under part of the hind feet is tuberculated beneath the joints, and scattered over with many small granules.

Whether this be the species intended by Linnaeus, under the name of *Rana musica*, may perhaps be questioned. In the *Systema Naturæ* he refers to no author or figure, but informs us, that the animal is a native of Surinam, and that it has a musical voice. I am, therefore, strongly inclined to believe that his *Rana musica* is in reality no other than the Merian Frog, which Seba describes as having a pleasing or musical voice, and adds, that the inhabitants consider the sound as a presage of fair weather.

MITRED TOAD.



Mit. sculp.

MITRED TOAD.

Rana Typhonia. *R. fusca, linea dorsali albida, capite triangulari.*
Brown Toad, with whitish dorsal line, and triangular head.

Rana typhonia. *R. auricularibus lobis ovatis.* *Linn. Syst. Nat.*
p. 356.

Rana margaritifera. *R. ex fusco rubra, granulis dilute rubellis*
conspersa. *Linn. Syst. Nat. Gmel. p. 1050. Laurenti Spec.*
Med. p. 30.

Bufo Typhonius. *Schneid. Amph. p. 207.*

THE first describer of this species seems to have been Seba, who calls it by the name of *Aquaqua*, and represents it as a native of Brasil. Its size is that of a common Toad, and its colour on the upper parts is a rufous brown, with a pale or whitish line down the back, and which appears to be not equally conspicuous in different specimens: the under part of the animal is whitish or pale; the thighs are barred with brown; and the skin over the whole body is beset with numerous small granules or protuberances of a blueish or pearly cast; but the principal character of this species is the subtriangular form of the head; the sides of which, beyond each eye, project into an angular protuberance, as shewn in the figure; and from the nose along each side of the head runs an elevated white line over the shoulders to the sides: the fore feet are tetradactylous and unwebbed; the hind feet pentadactylous, and webbed in the usual proportion, as in the common Toad. Mr. Schneider speaks of five bifid tubercles on the middle of the back, which seem to be indeed expressed in

Seba's figure, though not mentioned in the description accompanying it. This species, on account of the singular form of its head, is commonly called the Mitred Toad.

BRASILIAN TOAD.

Rana Brasiliana. R. rufa, maculis numerosissimis fuscis undique conspersa.

Rufous Toad, marked on all parts with very numerous brown spots.

Bufo Brasiliensis, de Aguaaquaquan dictus, orbiculatus. Seb. 1. p. 116. t. 73. fig. 1, 2.

Rana Brasiliensis. R. ex cinereo flavescens, maculis rubris undosis, subtus glabra. Lin. Syst. Nat. Gmel. p. 1049. Laur. Amph. p. 26.

THIS, which was first described by Seba, is considerably larger than the common Toad, which, in its general appearance, it much resembles, but the head is much shorter in proportion. The colour of the whole animal is rufous or yellowish-brown, paler beneath, and uniformly marked on all parts, both above and below, with very numerous, short, transverse, and somewhat wavy red-brown stripes or spots. The fore feet have only four toes, which are slightly rounded and dilated at the tips; and the hind feet, which are pretty strongly webbed, have five, which terminate in sharp points, or weak claws. This animal, according to Seba, is a native of the island of Cuba; but, from the name applied to it, both by Dr. Gmelin, in his edition of the *Systema Naturæ*, as well as by Seba

BRASILIAN TOAD.

*Head sw. p.*







GRANULATED TOAD.

himself, we may conclude that it is chiefly found in South America. Mons. Cepede informs us, that in the Royal Cabinet at Paris there is a specimen of this frog which measures above seven inches from the nose to the extremity of the body.

GRANULATED TOAD.

Rana Ventricosa. *R. granulata pallida, ventre dilatato, lateribus fusco maculatis.*

Pale-brown granulated Toad, with dilated abdomen marked on the sides with blackish spots.

Rana Brasiliensis orbicularis, Pipæ species. *Seb.* 1. p. 117. t. 74. f. 1.

Rana ventricosa. *R. ore semiovato, jugulo prominulo.* *Lín. Syst. Nat.* p. 355.

THIS species is also described and figured by Seba, who tells us that it is a native of Brasil, and is allied to the Pipa, or Surinam Toad. The head is large, as are also the eyes: the gape wide: the body somewhat depressed; the abdomen very broad; the limbs rather short than long; the fore feet tetradactylous; the hind feet pentadactylous and webbed. The colour of the upper parts is a pale yellowish or rufous brown; the under parts paler or whitish, and the sides marked by a longitudinal band of smallish irregular black or dusky spots. The upper surface, both of body and limbs, is also covered with somewhat distinctly placed granules or tubercles of different sizes; those on the neck, shoulders, and thighs, being larger than the rest; while on the last joints

of the legs they are much smaller, and more closely set. Seba's figure represents it as of very considerable size, measuring six inches from the nose to the end of the body.

HORNED TOAD.

Rana Cornuta. *R. cinerea fusco fasciata, palpebris conicis.*

Cinereous Toad, fasciated with brown, with conical eyelids.

Rana cornuta. *R. palpebris conicis.* Lin. *Syst. Nat.* p. 356.

Bufo cornutus seu spinosus Virginianus. Seb. 1. p. 115. t. 72.

f. 1, 2.

AMONG the whole tribe of Amphibia it is, perhaps, difficult to find an animal of a more singular appearance than the present, which may be regarded as of a more deformed and hideous aspect than even the Pipa, or Toad of Surinam. This arises not so much from the general shape of the animal, as from the extraordinary structure of the upper eyelids, which are so formed as to resemble a pair of short, sharp-pointed horns; while the width of the mouth is such as to exceed that of any other species, and even to equal half the length of the body itself.

This wonderful animal, says Seba, is of a short and thick form, and remarkable for having two sharp horns on its head, within which are situated the eyes. The skin of the body, both above and below, is of a cinereous yellow, striped with lines of obscure greyish brown. Along the back runs a broad white band, commencing at the head, and

HORNED TOAD.



M. sculp.



HORNED TOAD.



thence decreasing gradually, so as to appear narrow over the hind parts: it is also beset with small specks like pearls. All the rest of the body is rough with sharp spines, except the head, which is variegated with white, and the abdomen, which is of a deep rufous yellow. The legs are surrounded by a kind of bands or fillets, and the toes are marked in a similar manner, and resemble in some degree the human fingers, and are four in number on the fore legs, and five on the hind: the hind feet are also webbed. The head is very large and thick, and when the mouth is opened, exhibits a broad and thick tongue, shaped somewhat like an oyster, and fastened in front to the lower jaw, but loose behind, as in frogs: it is also covered over with papillæ: on each side the head, above the eyes and wide mouth, is a black spot on a white ground. The female agrees in all respects with the male, except that the mouth is still wider, and the front is variegated in a somewhat different manner: between the eyes is a broad stripe, growing narrower on the nose: beneath each eye is a spot resembling an additional or false eye: the hind feet very much resemble hands, having a thumb and four fingers, without being webbed as in the male.

Seba seems to have been misinformed as to the native country of this species, which he imagined to be Virginia; but the animal is now known to be a native of South America only.

It appears that this animal was pretty well described so long ago as the year 1726, in the cata-

logue of Vincent's Museum, at the Hague. It is there called *Bufo Americanus rarissimus*, &c.

“ The body large and round; the back cinereous, marbled with brown: the brown colour, which appears in the middle, parted by a cinereous list or stripe, which runs from the lower part of the horned eyes; to a great distance, and ends in a point. Above the large, horned eyes, which are seated near each other, and towards the back part of the head, are placed two holes, or seeming spiracles: the head is smooth and broad; but the back, on each side the middle stripe, is beset with rough tubercles as far as the belly: there are four feet, which are marbled with deep brown spots: the mouth is very large, being a hand's breadth in diameter, and equalling that of the body: beneath the mouth and neck the colour of the skin is brown: all the belly, as far as the rump, is whitish: the toes of the feet are divided; those of the fore feet being four in number, and those of the hind five.”

Mr. Schneider also has described two specimens of this animal, which were brought from Surinam. The parts which Linnæus somewhat improperly calls horns, are, he observes, a pair of acuminate, callous processes, of a conical shape, seated on the eyelids: the whole back, according to Mr. Schneider, is scattered over with sharp tubercles; and the gape of the mouth reaches almost half the length of the body: the eyes rather small, and less distant than in most other frogs: the feet smooth, and the toes unarmed: the fore feet unwebbed;

the hind feet slightly webbed: each upper eyelid, which rises up into a large and conical callus or horn, is beset with small tubercles: on the sides of the body were, in these specimens, some fulvous spots, and some large striated calli, resembling, in some degree, the spines on the back of a skate: the edge of the upper jaw was beset with very thickly-placed crenatures or denticulations: the tongue thick, rough, fixed in front, but loose on the back-part.

Thus the whole account confirms the fidelity of Seba's description and figures, which, from the extreme singularity, as well as rarity, of the species, seemed, in some degree, to have been considered as dubious.

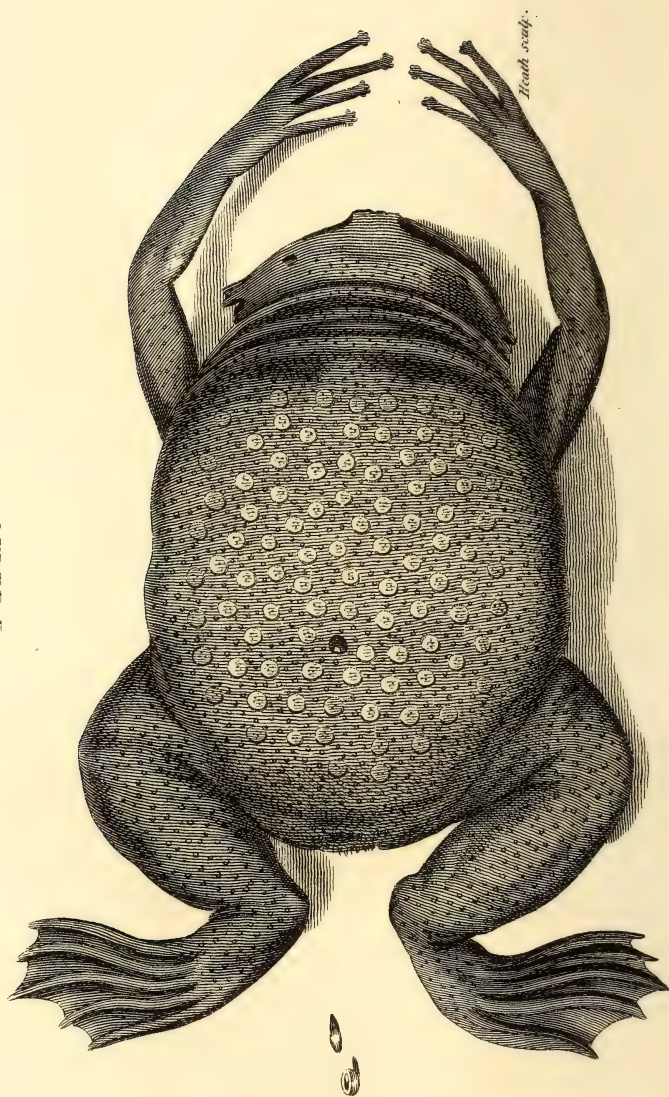
Of all animals yet known, this may, perhaps, according to our general or popular ideas of proportion and beauty, be considered as the most deformed: a sentiment, however, merely to be admitted so far as it relates to a comparison with other beings, which we have accustomed ourselves to consider as more perfect. On this subject let us attend to the sentiments of a celebrated writer of the seventeenth century.

“ I hold there is a general beauty in the works of God, and, therefore, no deformity in any kind or species of creature whatsoever: I cannot tell by what logic we call a Toad, a Bear, or an Elephant, ugly, they being created in those outward shapes and figures which best express the actions of their inward forms. And having past that general visitation of God, who saw that all that he had made

was good, that is conformable to his will, which abhors deformity, and is the rule of order and beauty, there is no deformity but in monstrosity; wherein, notwithstanding, there is a kind of beauty; Nature so ingeniously contriving the irregular parts, as they become sometimes more remarkable than the principal fabrick. To speak yet more narrowly, there never was any thing ugly or mis-shapen but the chaos: wherein notwithstanding, to speak strictly, there was no deformity, because no form; nor was it yet impregnate by the voice of God. Now Nature is not at variance with Art, nor Art with Nature; they being both the servants of his Providence. Art is the perfection of Nature; were the world now as it was on the sixth day, there were yet a Chaos. Nature hath made one World, and Art another. In brief, all beings are artificial, for Nature is the Art of God."—*Rel. Med. p. 9.*

The learned and acute Sir Kenelm Digby, in his observations on the above passage, replies, "That logick which he quarreleth at, for calling a Toad or Serpent ugly, will in the end agree with his: for nobody ever took them to be so in respect to the *Universe* (in which regard he defendeth their regularity and symmetry), but only as they have relation to us."

PIPA.

*Head scaly.*

PIPA.

Rana Pipa. *R. fusca, digitis anticis apice quadrifidis.*

Brown Toad, with the toes of the fore feet quadrifid at their extremities.

Rana Pipa. *R. digitis anticis muticis quadridentatis, posticis unguiculatis.* *Lin. Syst. Nat. p. 354.*

Bufo aquaticus pullos super dorsum gerens. *Merian Surinam, pl. 59.*

Bufo aquaticus Surinamensis. *Vincent. pip. 1726. t. 62.*

Rana Surinamensis. *Bradl. Nat. t. 22. f. 1.*

Bufo s. Pipa Americana. *Seb. 1. p. 121. t. 77.*

The Pipa, or Surinam Toad.

THIS also is one of those animals which, at first view, every one pronounces deformed and hideous; the general uncouthness of its shape being often aggravated by a phænomenon unexampled in the rest of the animal world, viz. the young in various stages of exclusion, proceeding from cells dispersed over the back of the parent.

The size of the Pipa considerably exceeds that of the common toad: the body is of a flattish form; the head subtriangular; the mouth very wide, with the edges or corners furnished with a kind of short cutaneous, and, as it were, lacerated appendage on each side: in the male, however, the head is rather oval than triangular, and the parts just mentioned less distinct: the fore feet are tetradactylous, the toes long and thin, and each divided at the tip into four distinct portions or processes, each of which, if narrowly inspected with a magnifier, will be found to be

again obscurely subdivided almost in a similar manner: the hind feet are five-toed, and very widely webbed; the web reaching to the very tips of the toes. The male Pipa is larger than the female, measuring sometimes not less than seven inches from the nose to the end of the body: the nose in both sexes is of a somewhat truncated form, like that of a mole, or hog, and the eyes extremely small: from each eye, in the female, run two rows of granules or glandular points to the middle of the back: the whole body is also covered with similar points or glandules, but smaller than the former: in the male a single row of granules proceeds from each eye down the back, instead of a double row, as in the female: these points or granules are also larger than in the female, and gradually decrease in size as they approach the lower part of the back: the skin round the neck, in both sexes, forms a kind of loose or wrinkled collar: the abdomen of the male is of a browner tinge than that of the female, and is sometimes obscurely spotted with yellow; but the general colour, both of the male and female Pipa, is a dark or blackish brown. The Pipa seems to have been first made known to European naturalists about the latter end of the seventeenth century, and to have been first described by Ruysch. It was afterwards described and figured by Madam Merian; but with much greater accuracy by the editor of Seba's Museum, where it is represented in its different states.

It was for a long time supposed that the ova of

PIPA.



this extraordinary animal were produced in the dorsal cells, without having been first excluded in the form of spawn; but later observations have proved that a still more extraordinary process takes place; and that the spawn after exclusion, is received into the open cells of the back, and there concealed till the young have arrived at maturity. This discovery was made by Dr. Fermin, who had an opportunity, during his residence at Surinam, to investigate the natural history of the Pipa in a more accurate manner than had before been practicable. His account is, that the female Pipa deposits her eggs or spawn at the brinks of some stagnant water; and that the male collects or amasses the heap of ova, and deposits them with great care on the back of the female, where, after impregnation, they are pressed into the cellules, which are at that period open for their reception, and afterwards close over them; thus retaining them till the period of their second birth; which happens in somewhat less than three months, when they emerge from the back of the parent in their complete state. During the time of the concealment, however, they undergo the usual change of the rest of this genus, being first hatched from the egg in the form of a tadpole; and gradually acquire their complete shape, some time before their exclusion. This latter circumstance, which does not appear to have been known to Fermin, is confirmed by the united testimonies of Camper, Blumenbach, and Spallanzani, who have all had an opportunity of inspect-

ing specimens of the animal in a state favourable to the examination of this particular. Upon the whole, it appears that there is some analogy in the process of nature with respect to the production of the young, between this animal and the opossum.

According to Fermin, the Pipa is calculated by Nature for producing but one brood of young; and, compared with the rest of the genus, it can by no means be considered as a very prolific animal; the number of young produced by the female which he observed, amounted to seventy-five, which were all excluded within the space of five days.

By a singular error in the Gmelinian edition of the *Systema Naturæ*, the young of the Pipa are said to be at first tailless; afterwards to acquire that part, and again to lose it.

SHORT-HEADED TOAD.

Rana Breviceps. *R. subfusca, subtus pallida, corpore ovato-convexo, vitta longitudinali cinereo-dentata, pedibus fissis.*

Brownish Toad, pale beneath, with ovate convex body, marked by a longitudinal ash-coloured dentated band.

Rana gibbosa. *R. corpore ovato-convexo, vitta longitudinali cinereo-dentata, pedibus fissis.* *Lin. Syst. Nat. p. 355.*

Rana rubeta Africana. *Seb. 2. p. 37. t. 37. f. 3.*

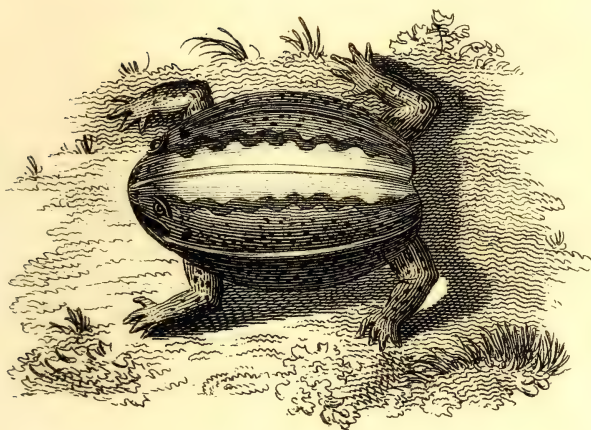
Le Bossu. *Cepede.*

Rana breviceps. * *Schneid. Amph. p. 140.*

THE *Rana breviceps*, or Short-headed Toad, is described by Linnæus, in the first volume of the

SHORT HEADED TOAD,
from Seba.

52.



LE BOSSU. *Cepede.*

Amoenitates Academicæ, where it is said to be of a subglobose form, extremely convex, of a wrinkled but not tuberculated surface, clouded, and marked by a palish longitudinal dorsal band, which is sinuated on each side: the head very small, obtuse, and immersed in the thorax: the toes of the fore feet unwebbed, without claws, and somewhat tuberosous or knotted beneath the joints: the toes of the hind feet six; the thumb broader than the others. In the *Systema Naturæ* he describes it as having an ovate convex body, unwebbed feet, and a longitudinal, cinereous, dentated band or stripe. He does not, however, quote Seba, in whose work it appears to have been first figured. It is one of the smaller species, scarcely exceeding half the size of the common toad. The hind feet are slightly palmated, though this circumstance is not particularized in the Linnæan description above quoted. It is a native of Senegal and other parts of Africa.

 INDISTINCT TOAD.

Rana Systoma. *R. corpore subgloboso, capite indistincto, rictu angusto.*

Toad with subglobose body, indistinct head, and small mouth.

Rana Systoma. *Schneid. Amph. p. 144.*

THIS, from Mr. Schneider's account, who seems to have been its first describer, is much allied to the former; having a thick roundish body, with the head so blended in the general outline that

the mouth is scarce apparent: the legs are very short, and the thighs are, as it were, imbedded or inclosed in the wrinkled skin of the sides. The whole animal is smooth or without tubercles: the fore feet unwebbed; the hinder very slightly webbed. The colour of the whole is pale or whitish, spotted or marbled with brown on the upper part: across each of the upper eyelids runs a curved white band or streak uniting towards the nostrils, and upper lip: the eyes are of moderate size. This species was described from a specimen in spirits from the East Indies.

HEADLESS TOAD.

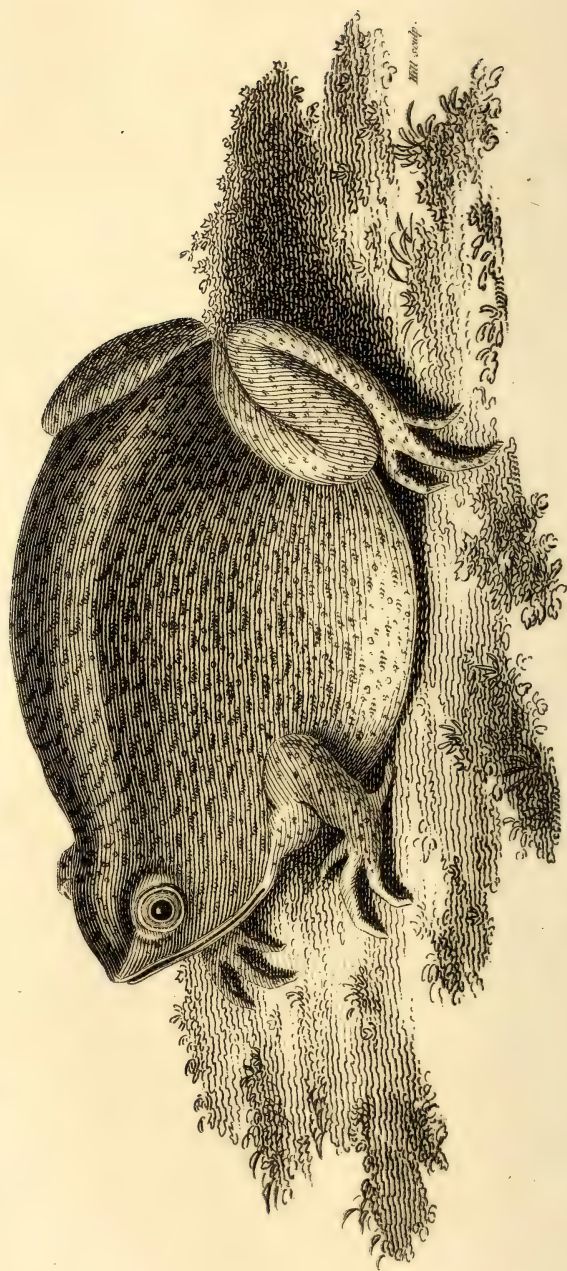
Rana Acephala. *R. corpore subgloboso fusco albo vario, capite indistincto, rictu angustissimo deorsum curvato.*

Brownish Toad, marbled with white, with indistinct head and very small mouth, curving downwards.

Rana acephala. *Schneid. Amph. p. 146.*

THIS is extremely allied to the two former species, and might even be mistaken for the Short-headed Toad, but differs not only in colour, but in the still less apparent distinction of the head, which is so lost in the outline of the body as to be perfectly blended: the mouth is also much smaller than in either of the two preceding animals, and curves downwards at each corner. The colour of this species is brown, variegated with white. The legs are short and weak, as in the two former kinds.

CAROLINA TOAD.



CAROLINA TOAD.

Rana Lentiginosa. *R. griseo fusco irrorata, capite subacuminato.*
 Grey Toad, freckled with brown, with subacuminated head.
 Land-Frog. *Catesb. Carol. 2. pl. 69.*

THIS very much resembles the common toad in its general appearance, but has a smaller head and sharper snout. Its motion also is not that of crawling, but leaping. Its colour is a dusky brown, paler beneath, and it is all over mottled with minute blackish or dark brown spots: the irides of the eyes are red. This animal is common in Carolina and Virginia, feeding, like most others of this genus, on insects, and is said to be particularly attracted by any luminous insects, as fire-flies, glow-worms, &c. and will even seize and swallow a small live wood coal of the size of the end of the finger; mistaking it for some luminous insect, and seeming to receive no immediate injury in consequence. These animals are said to be most common in wet weather, but are very frequent on the higher grounds, and appear in the hottest part of the day, as well as in the evening. They vary somewhat in colour, being deeper or paler in different individuals.

CRESCENT TOAD.

Rana Semilunata. *R. nigricans, subtus pallida, macula auriculari utrinque lunata alba.*

Blackish Toad, paler beneath, with a white crescent-shaped spot at each ear.

Bufo semilunatus. *Schneid. Amph. p. 215.*

DESCRIBED by Mr. Schneider, from a specimen in the collection of Dr. Bloch. Size larger than that of the common toad: body blackish; paler beneath: behind the parotids a large, round, white spot: tympanum black, with a semicircular white spot behind it: towards the middle of the back a long narrow spot on each side: hind feet semipalmated: body covered above with tubercles.

 BLACK-LIPPED TOAD.

Rana Melanosticta. *R. cinereo-flavescens, verrucis nigro-punctatis, labio superiore palpebrisque nigro marginatis plantis subhexadactylis semipalmatis.*

Yellowish-brown Toad, with black-speckled warts; the upper lip and eyelids edged with black, and subhexadactylous semipalmated hind feet.

Bufo melanostictus. *Schneid. Amph. p. 216.*

IN the collection of Dr. Bloch: supposed to be a native of China: colour cinereous; body and limbs thickly scattered over with warted tubercles, which are speckled with black, except on the sides and belly, where they are of the colour of

the rest of the skin : space between the eyes depressed, and smooth ; the borders of the projecting orbits of the eyes are black, and run backwards as far as the drum of the ears, and descending in front, unite before the nostrils : the same border also surrounds the upper jaw : the tips of the toes, and the two calli of both hind and fore feet, are also black. The hind feet are semipalmated. A fine specimen, agreeing with this description, is preserved in the British Museum ; its size is nearly equal to that of the common toad, which it much resembles in habit : its colour is a pale yellowish brown.

ARUNCO.

Rana Arunco. *R. corpore verrucoso, pedibus omnibus palmatis.*

Frog with warted body, and all the feet webbed.

Rana Arunco. *Molin. Chil. p. 190.*

LARGER than the common frog ; nearly of the same colour ; with the body warted, and all the feet palmated. It is a native of Chili, and is described by Molina.

YELLOW TOAD.

Rana Lutea. R. corpore luteo, pedibus omnibus subpalmatis.

Molin. Chil. p. 190. Lin. Syst. Nat. Gmel. p. 1050.

Yellow Toad, with all the feet subpalmated.

THIS has the general habit of a common frog, but is much smaller, and the skin is warted: its colour yellow*; all the feet subpalmated. Inhabits, like the former, the waters of Chili.

SOME other undetermined or uncertain species might be added to this genus, from the vague descriptions and rude figures of authors; but as no dependence can be placed on their accuracy, it is perhaps best to omit them altogether.

* The colour, throughout this whole genus, but more particularly among the Toads, differs in intensity, according to the time which has elapsed since the animal cast its cuticle. The manner in which toads perform this process is thus related by Mr. Schneider, from Grignon, who was an eye-witness of it: "The skin splits or cracks in a longitudinal direction both above and below; and the animal pulls off that of the left side with its left foot, and delivering it into the right foot, applies it to its mouth and swallows it: it then performs the same process on the right side with the right foot, and delivering the cuticle into the left foot, swallows it like the former.

FLYING DRAGON.



DRACO. DRAGON.

Generic Character.

<p><i>Corpus</i> tetrapodum, caudatum, alatum: alis propriis.</p>	<p><i>Body</i> four-footed, tailed, and furnished on each side with an expansile, radiated, wing-like skin.</p>
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FLYING DRAGON.

Draco Volans. *D. brachiis ab ala distinctis. Lin. Syst. Nat. p. 358.*

Dragon, with the fore legs unconnected with the wings.

Lacerta cauda tereti, pedibus pentadactylis, alis femore connexis, crista gulæ triplici. Amoen. Acad. 1. p. 540.

Lacerta volans indica. Raj. Quadr. p. 275.

Lacerta africana volans, s. Draco volans. Seb. 2. t. 86. f. 3.

Lacertus volans, s. Dracunculus. Bont. Jav. 57. t. 57.

Flying Dragon. *Nat. Misc. 1. pl. 8.*

THE very name of this genus conveys to the mass of mankind the idea of some formidable monster, and recalls to the imagination the wild fictions of romance and poetry; but the animal distinguished by that title in modern natural history is a small and harmless Lizard, agreeing in the general form of its body with the rest of that

tribe ; but furnished with large, expansile, cutaneous processes, covered, like the rest of the animal, with small scales, and strengthened internally by several radii or ribs, extending to the extreme verge of the membrane, and giving the power of contraction and dilatation. As this is a circumstance which separates it from the rest of the Lizard tribe, Linnæus was induced to institute for it a distinct genus under the title above mentioned, and which it seems more proper to retain than to rank the animal, as some have done, under the genus *Lacerta*.

The total length of this highly curious creature is commonly about nine or ten inches, or at most a foot ; the tail being extremely long in proportion to the body, which does not measure more than about four inches in length. The head is of a very singular form, being furnished beneath with a very large triple pouch or process, one part of which descends beneath the throat, while the two remaining parts project on each side ; all are sharp-pointed, and seem analogous in some degree to the gular crests of the Guana and other Lizards, but are still more conspicuous in proportion to the size of the animal. The head is of moderate size ; the mouth rather wide ; the tongue large, and thick at the base ; the teeth small and numerous ; the neck rather small ; the body and limbs somewhat slender, and universally covered with small acuminate and closely-set scales, which incline more to a minutely aculeated appearance on the tail. The colour of the Dragon

on the upper parts is an elegant pale blue, or blueish grey, the back and tail being marked by several transverse dusky undulations or bars, while the wings are very elegantly spotted, more especially towards the broadest part, with differently-shaped patches of black, deep-brown, and white: the border of the wings is also white, and the whole under surface of the animal is of a very pale or whitish brown colour.

This animal is no where so elegantly or faithfully figured as is the work of Seba; the representations in the works of other authors being in every respect inferior, and even unworthy of quotation.

The Dragon is an inhabitant of many parts of Asia and Africa, where, like most of the smaller Lizards, it delights in wandering about trees, and from the peculiar mechanism of its lateral membranes, is enabled to spring from bough to bough, and to support itself in air for some short space, in the manner of a flying squirrel, or even of a bat. It feeds on insects, and is in every respect an animal of a harmless or inoffensive nature.

VAR. ?

Draco Præpos. *D. brachiis aë adnatis*. Lin. Syst. Nat. p. 258.

Dragon with wings coalescing with the arms.

Draco volans Americanus. Seb. 1. t. 102. f. 2.

THIS is considered by Linnæus in the twelfth edition of the Systema Naturæ as a distinct species; on the authority of Seba, who represents it a

native of America ; but it seems at present to be unknown to other naturalists ; and is, perhaps, no other than a variety of the preceding ; differing in the circumstances described in the specific character, and having a more slender neck and body, and a single rather than a triple gular pouch.

It may not be improper here to add, that all the other animals described and figured in the works of some of the older naturalists, under the name of Dragons, are merely fictitious beings, either artificially composed of the skins of different animals, or made by warping some particular species of the Ray or Skate tribe into a dragon-like shape, by expanding and drying the fins in an elevated position, adding the legs of birds, &c. and otherwise disguising the animals. Such also are the monstrous representations (to be found in Gesner and Aldrovandus) of a seven-headed Dragon, with gaping mouths, long body, snake-like necks and tail, and feet resembling those of birds. These deceptions appear to have been formerly practised with some success ; and misled not only the vulgar, but even men of science. Of this a curious example is said to have occurred towards the close of the seventeenth century, and is thus commemorated by Dr. Grainger, from a note of Dr. Zachary Grey, in his edition of *Hudibras*, vol. 1. p. 125.

“ Mr. Smith, of Bedford, observes to me, on the word *Dragon*, as follows : Mr. Jacob Bobart, botany professor * of Oxford, did, about forty years

* Not, properly speaking, Professor, but rather Superintendant of the garden.

ago, find a dead rat in the physic garden, which he made to resemble the common picture of dragons, by altering its head and tail, and thrusting in taper sharp sticks, which distended the skin on each side till it mimicked wings. He let it dry as hard as possible. The learned immediately pronounced it a dragon; and one of them sent an accurate description of it to Dr. Magliabechi, librarian to the grand Duke of Tuscany; several fine copies of verses were wrote on so rare a subject; but at last Mr. Bobart owned the cheat; however it was looked upon as a master-piece of art; and, as such, deposited in the Museum, or Anatomy-School, where I saw it some years after."

The most remarkable instance, in later times, is that of a Dragon of the kind above-mentioned, which was in possession of a merchant at Hamburgh, and which was considered by its proprietor as of the value of 10,000 florins; but which the penetrating eye of Linnæus, during his visit to that city, soon discovered to be a mere deception, ingeniously contrived by a dextrous combination of the skins of snakes, teeth of weesels, claws of birds, &c. being, as Linnæus himself expresses it, "*non Naturæ sed artis opus eximium.*" It is said that Linnæus, in consequence of this discovery, was obliged to fly from Hamburgh, in order to avoid the wrath of the enraged proprietor, who determined on a prosecution against him, as having injured the reputation of his property. An exact representation of this curious imposture is given by Seba, who, however, does

not, as commonly supposed, describe it as a really existing species, but merely as so reported. It would be scarcely excusable to swell the number of plates in the present work, by an introduction of this figure, merely to elucidate the anecdote: it is, therefore, entirely omitted.

LACERTA. LIZARD.

Generic Character.

<i>Corpus</i> tetrapodum, elongatum, caudatum, nudum.		<i>Body</i> four-footed, elongated, tailed; without any secondary integument.
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THIS numerous genus may be divided into the following sections or sets, viz.

1. *Crocodyles*, furnished with very strong scales.
2. *Guanas*, and other Lizards, either with serrated or carinated backs and tails.
3. *Cordyles*, with denticulated, and sometimes spiny scales, either on the body or tail, or both.
4. *Lizards proper*, smooth, and the greater number furnished with broad square scales or plates on the abdomen.
5. *Chamæleons*, with granulated skin, large head, long missile tongue, and cylindric tail.
6. *Geckos*, with granulated or tuberculated skin, and lobated feet, with the toes lamellated beneath.
7. *Scinks*, with smooth, fish-like scales.

8. *Salamanders, Newts, or Efts*, with soft skins, and of which some are water-lizards.
9. *Snake-Lizards*, with extremely long bodies, very short legs, and minute feet.

The above divisions neither are, nor can be, perfectly precise ; since species may occur which may with almost equal propriety be referred to either of the neighbouring sections ; but in general they will be found useful in the investigation of the species.

CROCODILES.

COMMON CROCODILE.

Lacerta Crocodilus. L. capite cataphracto, nucha carinata, cauda superne cristis binis lateralibus horida. Lin. Syst. Nat. Gmel. p. 1057. Blumenb. Naturg. 262.

Lizard with mailed head, carinated neck, and tail furnished on the upper part with two lateral crested processes.

Lacerta cauda compressa serrata, pedibus triunguiculatis, palmis pentadactylis, plantis tetradactylis palmatis. Lin. Syst. Nat. p. 359.

Crocodilus. Gesn. Aldr. Bellon. Jonst. &c.

The Common or Nilotic Crocodile.

THE Crocodile, so remarkable for its size and powers of destruction, has in all ages been regarded as one of the most formidable animals of the warmer regions. It is a native of Asia and Africa, but seems to be most common in the latter ; inhabiting large rivers, as the Nile, the

COMMON CROCODILE.



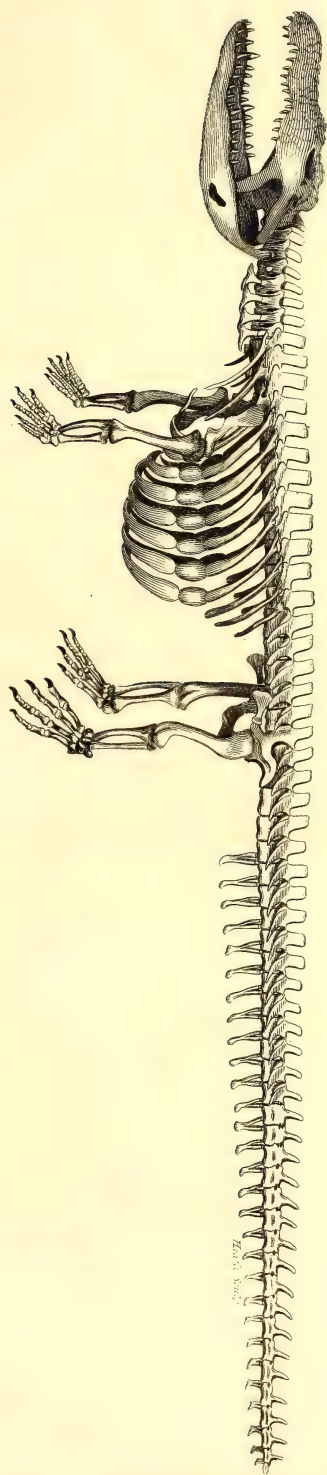
Niger, &c. and preying principally on fish, but occasionally seizing on almost every animal which happens to be exposed to its rapacity. The size to which the Crocodile sometimes arrives is prodigious; specimens being frequently seen of twenty feet in length, and instances are commemorated of some which have exceeded the length of thirty feet. The armour with which the upper part of the body is covered may be numbered among the most elaborate pieces of Nature's mechanism. In the full grown animal it is so strong and thick as easily to repel a musket-ball; on the lower parts it is much thinner, and of a more pliable nature: the whole animal appears as if covered with the most regular and curious carved-work: the colour of a full-grown Crocodile is blackish-brown above, and yellowish-white beneath; the upper parts of the legs and the sides varied with deep yellow, and in some parts tinged with green. In the younger animals the colour on the upper parts is a mixture of brown and pale yellow, the under parts being nearly white: the eyes are provided with a nictitating membrane, or transparent, moveable pellicle, as in birds: the mouth is of vast width, the rictus or gape having a somewhat flexuous outline, and both jaws being furnished with very numerous sharp-pointed teeth, of which those about the middle part of each jaw considerably exceed the rest in size, and seem analogous to the canine teeth in the viviparous quadrupeds or mammalia: the number of teeth, in each jaw, is

thirty, or more*; and they are so disposed as to alternate with each other when the mouth is closed: on taking out the teeth and examining the alveoli, it has been found that small teeth were forming beneath, in order to supply the loss of the others when shed: the auditory foramina are situated on the top of the head, above the eyes, and are moderately large, oval, covered by a membrane, having a longitudinal slit or opening, and thus in some degree resembling a pair of closed eyes: the legs are short, but strong and muscular: the fore feet have five toes, and are unwebbed: the hind feet have only four toes, which are united towards their base by a strong web: the two interior toes on each of the fore feet, and the interior one of the hind feet, are destitute of claws†: on the other toes are strong, sharp, and curved claws: the tail is very long, of a laterally compressed form, and furnished above with an upright process, formed by the gradual approximation of two elevated crests proceeding from the lower part of the back.

The Crocodile, in a young state, is by no means to be dreaded, its small size and weakness pre-

* The number is observed to vary in different specimens; probably from the different age of the animal. In the skeleton described by Grew, and which measured about fourteen feet in length, there were thirty teeth in each jaw, and those teeth which appeared to be the least worn, were serrated by small denticulations on each side.

† In the skeleton described by Grew there were claws on all the toes.



SKELETON of CROCODILE.



venting it from being able to injure any of the larger animals: it, therefore, contents itself with fish and other small prey; and such as have occasionally been brought to Europe are so far from being formidable or ferocious, that they may generally be handled with impunity, and either from weakness, or the effect of a cold climate, seem much inclined to torpidity; but in the glowing regions of Africa, where it arrives at its full strength and power, it is justly regarded as the most formidable inhabitant of the rivers. It lies in wait near the banks, and snatches dogs and other animals, swallowing them instantly, and then plunging into the flood, and seeking some retired part, where it may lie concealed till hunger again invites it to its prey. In its manner of attack it is exactly imitated by the common *Lacerta palustris*, or Water Newt, which, though not more than about four or five inches long, will with the greatest ease swallow an insect of more than an inch in length; and that at one single effort, and with a motion so quick, that the eye can scarcely follow it. It poises itself in the water, and having gained a convenient distance, springs with the utmost celerity on the insect, and swallows it. If, therefore, a small lizard of four or five inches only in length can thus instantaneously swallow an animal of a fourth part of its own length, we need not wonder that a Crocodile of eighteen, twenty, or twenty-five feet long should suddenly ingorge a dog or other quadruped.

Crocodiles, like the rest of the *Lacertæ*, are oviparous: they deposit their eggs in the sand or mud near or on the banks of the rivers they frequent, and the young, when hatched, immediately proceed to the water; but the major part are said to be commonly devoured by other animals, as *Ichneumons*, birds, &c. The egg of the common or Nilotic Crocodile is not much larger than that of a goose, and in external appearance bears a most perfect resemblance to that of a bird; being covered with a calcarious shell, under which is a membrane. When the young are first excluded the head bears a much larger proportion to the body than when full grown. The eggs, as well as the flesh of the Crocodile itself, are numbered among the delicacies of some of the African nations, and are said to form one of their favourite repasts.

The gradual evolution and growth of the Crocodile are thus poetically described by Dr. Darwin:

“ So from his shell, on Delta’s showerless isle
 Bursts into birth the monster of the Nile;
 First, in translucent lymph, with cobweb threads
 The brain’s fine floating tissue swells and spreads:
 Nerve after nerve the glistening spine descends;
 The red heart dances, the aorta bends:
 Thro’ each new gland the purple current glides,
 New veins meand’ring drink the reflux tides.
 Edge over edge expands each hardening scale,
 And sheaths his slimy skin in silver mail.
 Erewhile, emerging from the brooding sand,
 With Tiger paw he prints the brineless strand:
 High on the flood with speckled bosom swims,
 Helm’d with broad tail, and oar’d with giant limbs;

YOUNG CROCODILE hatching from the EGG.





CEYLON CROCODILE *var.* from *Seba*.



Rolls his fierce eye-balls, clasps his iron claws,
And champs with gnashing teeth his massy jaws.
Old Nilus sighs thro' all his cane-crown'd shores,
And swarthy Memphis trembles and adores."

In the large rivers of Africa Crocodiles are said to be sometimes seen swimming together in vast shoals, and resembling the trunks of so many large trees floating on the water. The negroes will sometimes attack and kill a single Crocodile, by stabbing it under the belly, where the skin, at the interstices of the scales, is soft and flexible. It is also, in some countries, the custom to hunt the Crocodile by means of strong dogs, properly trained to the purpose, and armed with spiked collars. It is likewise pretended, that in some parts of Africa Crocodiles are occasionally tamed; and it is said that they form an article of Royal magnificence with the Monarchs of those regions; being kept in large ponds or lakes appropriated to their residence. We may add, that the ancient Romans exhibited these animals in their public spectacles and triumphs. Scaurus, during his ædileship, treated the people with a sight of five Crocodiles, exhibited in a temporary lake, and Augustus introduced one into his triumph over Cleopatra, as well as several others, for the entertainment of the people.

A vulgar error seems to have long prevailed relative to this animal's moving his upper jaw. This error seems to have been first rectified by Grew, in his description of the skeleton of a Crocodile

in the Museum of the Royal Society. His words are these: "The articulations of the lower jaw with the upper, and of the occiput with the foremost vertebra of the neck, are here made both in the same manner, as in other quadrupeds, notwithstanding the tradition of his moving the upper jaw: the senselessness of this tradition is plain from the structure of the bones, that is the articulation only of the occiput with the neck, and of the nether jaw with the upper, as abovesaid."

"The first author of it was Aristotle, in his fourth book *de partibus animalium*, cap. 11. and thus much is true, not only of this creature, but of all others which have a long head and a wide rictus, that when they open their mouths, they seem to move both jaws; as both the viper and the lizard; and for the same reason Columna might say as much of the Hippopotamus, that he moves the upper jaw, as the Crocodile. So all birds, especially with long bills, shew the contemporary motion of both the mandibles; the muscoli splenii pulling back the occiput, and so a little raising the upper, while the muscoli digastrici pull the other down. But that this motion was not meant by Aristotle, appears in his first book *De Hist. Anim.* c. 11. & lib. 3. c. 7. where he saith more plainly, that of all other animals only the Crocodile moveth the upper jaw; so that he speaks of it as a motion strange and peculiar; as if the upper mandible did make an articulation with the cranium; contrary to what is here seen; and if we will hear Piso, who

probably speaks Aristotle's meaning, as plainly as he doth his own, he goes further, and saith that the Crocodile doth not only move his upper jaw, but that his nether jaw is immoveable ; than which assertion, to one that hath any competent knowledge in anatomy, and seeth the head and lower jaw of this animal articulated in the same way as in other animals, nothing can appear more ridiculous."

Another error which has sometimes been maintained both among ancient and modern naturalists, is, that the Crocodile has no tongue: this part, however, is in reality very large, and even more so in proportion than that of an ox, but from its strong connexion with the sides of the lower jaw, it is as it were fixed or tied down, so as to be incapable of being stretched forwards as in most other animals. The describer, however, of Seba's Museum, denies that it can properly be called the tongue.

It may not be improper to add, that the Crocodile is supposed to be the *Leviathan* of the sacred writings.

VAR. ?

BLACK CROCODILE.

THIS, according to Mons. Adanson, is found in the river Senegal, and differs from the common Crocodile in having a longer snout, and in being almost entirely black. It is said to be extremely rapacious, and has hitherto been observed only in

the river above mentioned, where the common Crocodiles are also found in considerable numbers.

ALLIGATOR.

Lacerta Alligator. *L. capite imbricato plano, nucha nuda, cauda superne binis lineis lateralibus aspera.* *Lin. Syst. Nat. Gmel.* p. 1058. *Blum. Naturg.* p. 263.

Lizard with flat, imbricated head, naked or uncarinated neck, and tail furnished above with two rising lateral lines.

Crocodilus Americanus. *Laur. Amph.* p. 54.

Jacare. *Marcgr. Bras.* 242.

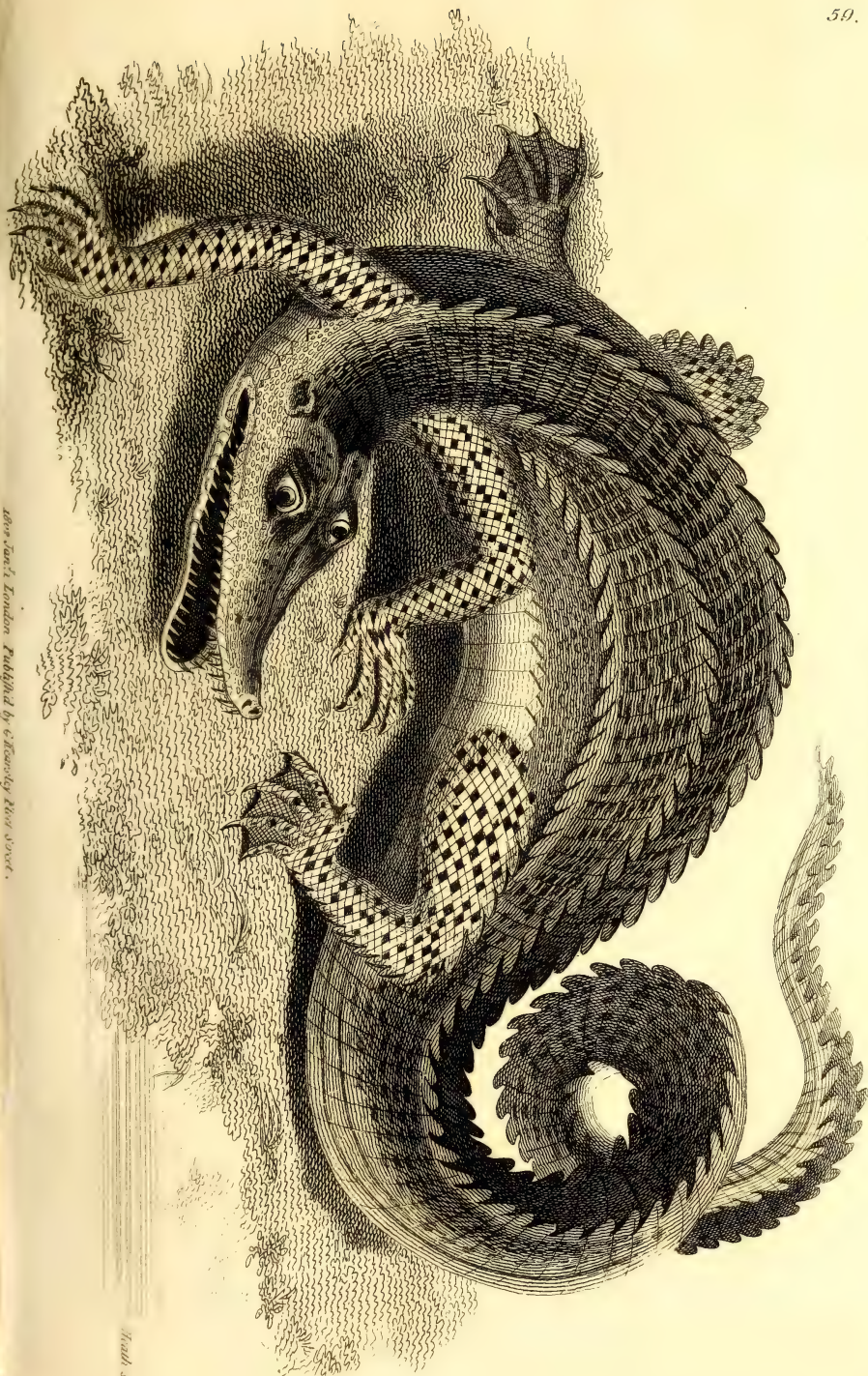
Crocolilus. *Sloan. Jam.* 2. p. 332.

Lacertus maximus. *Catesb.* 2. t. 63.

The Alligator, or American Crocodile.

So very great is the general resemblance between this animal and the Crocodile, that many naturalists have been strongly inclined to consider it as a mere variety, rather than a distinct species. Among others, the Count de Ceperde is of this opinion, and declares that on examining several specimens of American Crocodiles, and collating them with those of the Nile, he could not but consider them as absolutely of the same species; and that the slight differences observable between them may be well supposed to be owing merely to the effect of climate. Both animals, he observes, agree in the number of teeth; and the general manners and habits of both are found to be similar in the old and new continent. The more accurate

ALLIGATOR,

*Frank Webb.*

discrimination, however, of Blumenbach and some others seems in reality to prove that the Alligator or American Crocodile is specifically distinct from the Nilotic, though the difference is not such as immediately to strike a general observer. The leading difference, if it be allowed to constitute a distinction of species, seems to be, that the head of the Alligator is rather smooth on the upper part than marked with those very strong rugosities and hard carinated scales which appear on that of the Crocodile; and that the snout is considerably flatter and wider, as well as more rounded at the extremity. The Alligator arrives at a size not much inferior to that of the Crocodile, specimens having been often seen of eighteen or twenty feet in length.

“ Though the largest and greatest numbers of Alligators,” says Catesby, “ inhabit the torrid zone, the continent abounds with them ten degrees more north, particularly as far as the river *Neus* in *North Carolina*, in the latitude of about 33, beyond which I have never heard of any, which latitude nearly answers to the northernmost parts of Africa, where they are likewise found. They frequent not only salt rivers near the sea, but streams of fresh water in the upper parts of the country, and in lakes of salt and fresh water, on the banks of which they lie lurking among reeds, to surprise cattle and other animals. In Jamaica, and many parts of the continent, they are found about twenty foot in length: they cannot be more terrible in their aspect than they are

formidable and mischievous in their natures, sparing neither man nor beast they can surprise, pulling them down under water, that being dead, they may with greater facility, and without struggle or resistance, devour them. As quadrupeds do not so often come in their way, they almost subsist on fish; but as Providence, for the preservation, or to prevent the extinction of defenceless creatures, hath in many instances restrained the devouring appetites of voracious animals, by some impediment or other, so this destructive monster, by the close connexion of his vertebræ, can neither swim nor run any way than strait forward, and is consequently disabled from turning with that agility requisite to catch his prey by pursuit: therefore they do it by surprise in the water as well as by land; for effecting which, Nature seems in some measure to have recompensed their want of agility, by giving them a power of deceiving and catching their prey by a sagacity peculiar to them, as well as by the outer form and colour of their body, which on land resembles an old dirty log or tree, and in the water frequently lies floating on the surface, and there has the like appearance, by which, and his silent artifice, fish, fowl, turtle, and all other animals are deceived, suddenly caught and devoured."

"Carnivorous animals get their food with more difficulty and less certainty than others, and are often necessitated to fast a long time, which a slow concoction enables them to endure: reptiles particularly, by swallowing what they eat whole,

digest slowly, eat seldom, and live long without food. Wolves are said to gorge themselves with mud, to supply the want of better food. For the like cause many Alligators swallow stones and other substances, to distend and prevent the contraction of their intestines when empty, and not to help digestion, which they seem in no need of. For in the greater number of many I have opened, nothing has appeared but clumps of *lightwood* and pieces of pine tree coal, some of which weighed eight pounds, and were reduced and wore so smooth from their first angular roughness, that they seemed to have remained in them many months. They lay a great number of eggs at one time, in the sandy banks of rivers and lakes, which are hatched by the heat of the sun without further care of the parents. The young, as soon as they are disengaged from their shells, betake themselves to the water, and shift for themselves; but while young they serve as a prey not only to ravenous fish, but to their own species. It is to be admired that so vast an animal should at first be contained in an egg no bigger than that of a turkey."

"In South Carolina they are very numerous, but the northern situation of that country occasions their being of a smaller size than those nearer the line, and they rarely attack men or cattle, yet are great devourers of hogs. In Carolina they lie torpid from about October to March, in caverns and hollows in the banks of rivers, and at their coming out in the spring, make an hideous bel-

lowing noise. The hind part of their belly and tail are eat by the Indians. The flesh is delicately white, but has so perfumed a taste and smell that I never could relish it with pleasure."

According to the observations of Mons. de la Borde, as related by the Count de Cepede, it appears that the Alligators in South America deposit their eggs, like the turtles, at two or three different periods, at the distance of some days from each other; laying from twenty to about four-and-twenty eggs each time. Mons. de la Borde adds, that those of Cayenne and Surinam are observed to raise a little hillock towards the banks of the river they frequent, and hollowing it out in the middle, to amass together a heap of leaves and other vegetable refuse in which they deposit their eggs, and covering them with their leaves, a fermentation ensues, by the heat of which, joined to that of the atmosphere, the eggs are hatched. The time at which the Alligators about Cayenne begin to lay their eggs, is the same with that in which the turtles also deposit theirs, viz. the month of April. Both the Alligator and the Crocodile are supposed to be very long-lived animals, and their growth is extremely slow.

GANGETIC CROCODILE.



GANGETIC CROCODILE.

Lacerta Gangetica. L. maxillis elongatis teretibus subcylindricis. cauda superne cristis binis in unam confluentibus horrida. Lin. Syst. Nat. Gmel. p. 1057. Gronov. Gazoph. 2. p. 11.

Lizard with elongated subcylindric jaws, and tail furnished above with two crests coalescing into one towards the extremity.

JUN. ? *Crocodilus ventre marsupio donatus, faucibus merganseris rostrum æmulantibus. Edw. Act. Angl. 49. p. 369. t. 19.*

Gangetic, or Indian Crocodile.

THE Gangetic Crocodile is so strikingly distinguished both from the Nilotic and the Alligator by the peculiar form of the mouth, that it is hardly possible, even on a cursory view, to confound it with either of the former; the jaws being remarkably long, narrow, and perfectly strait, and the upper mandible terminated above by an elevated tubercle. In the general form and colour of the body and limbs it resembles the common Crocodile, but the number of transverse zones or bands formed by the rows of scales, on the back, is greater than in that species. In a very young state the length and narrowness of the snout are still more conspicuous than in the full-grown animal. The teeth are nearly double the number of those of the common Crocodile, and are of equal size throughout the whole length of the jaws. This species is a native of India, and is principally seen in the Ganges, where it arrives at a size at least equal to the Nilotic Crocodile, and is of similar manners. It seems to have been first no-

ticed as a distinct species by Edwards, who, in the Philosophical Transactions for the year 1759, gave an accurate description, accompanied by a good figure, of a young specimen preserved in spirits, and which was received by Dr. Mead from Bengal. This specimen had a remarkable aperture on the skin of the abdomen, which was at that time considered as forming a kind of specific character, but which was probably nothing more than the passage by which the umbilical vessels of the animal were attached during its confinement in the egg. It was however supposed by Edwards to have been the opening of a ventral pouch destined for the reception of the young, as in the Opossum. The general structure of the feet is similar to that of the common Crocodile, except that the third and fourth toes only, and this on the fore as well as hind feet, are connected together by a web. "The eyes," says Edwards, "are very prominent, and seem to be so constructed that they may be carried above the water, while the rest of the animal is wholly under water, in order to watch its prey on the surface, or on the banks and shores of rivers."

In the British Museum is a specimen of this animal measuring about eighteen feet. In the Leverian Museum is an elegant and well-preserved specimen of much smaller size, viz. about three feet in length.

COMMON GUANA.



Guanas with serrated dorsal crest, &c.

COMMON GUANA.

Lacerta Iguana. *L. cauda tereti longa, dorso serrato, crista gulæ denticulata.*

Lizard with long round tail, serrated back, and denticulated gular crest.

Lacerta Iguana. *L. cauda tereti longa, sutura dorsali dentata, crista gulæ denticulata.* *Lin. Syst. Nat. p. 366.*

Lacerta Leguan. *Bont. Jav. 56.*

Lacertus Senembi & Iguana. *Raj. Quadr. 265.*

Leguana. *Seb. Mus. 1. t. 95, 96, 97, &c.*

The Great American Guana.

THOUGH the Lizard tribe affords numerous examples of strange and peculiar form, yet few species are perhaps more eminent in this respect than the Guana, which grows to a very considerable size, and is often seen of the length of three, four, and even five feet. It is a native of many parts of America and the West-Indian islands, and is also said to occur in some parts of the East Indies. Its general colour is green, but with much variation in the tinge of different individuals: it is generally shaded with brown in some parts of the body, and sometimes this is even the predominating colour. The back of the Guana is very strongly serrated; and this, together with the gular pouch, which it has the power of extending or inflating occasionally to a great degree, gives a formidable appearance to an animal otherwise harmless. It inhabits rocky and woody places, and feeds on insects and vegetables. It is itself

reckoned an excellent food, being extremely nourishing and delicate; but is observed to disagree with some constitutions. The common method of catching it is by casting a noose over its head, and thus drawing it from its situation; for it seldom makes an effort to escape, but stands looking intently at its discoverer, inflating its throat at the same time in an extraordinary manner. The Guana has been described and figured by several authors, but the most expressive representations are those given by Seba.

“Guanas,” says Catesby, “are of various sizes, from two to five feet in length; their mouths are furnished with exceeding small teeth, but their jaws armed with a long beak, with which they bite with great strength: they inhabit warm countries only, and are rarely to be met with any where north or south of the tropics. Many of the Bahama islands abound with them, where they nestle in hollow rocks and trees: their eggs have not a hard shell, like those of Alligators, but a skin only, like those of a turtle; and are esteemed a good food. They lay a great number of eggs at a time, in the earth, which are there hatched by the sun’s heat. These Guanias are a great part of the subsistence of the inhabitants of the Bahama islands, for which purpose they visit many of the remote *Kayes* and islands in their sloops to catch them, which they do by dogs trained up for that purpose, which are so dextrous as not often to kill them, which if they do, they serve only for present spending; if otherwise, they sew up their

mouths, to prevent their biting, and put them into the hold of their sloop till they have catched a sufficient number, which they either carry alive for sale to Carolina, or salt and barrel up for the use of their families at home. These Guanas feed wholly on vegetables and fruit, particularly on a kind of fungus growing at the roots of trees, and on the fruits of the different kinds of *Annonas*. Their flesh is easy of digestion, delicate, and well-tasted: they are sometimes roasted, but the more common way is to boil them, taking out the leaves of fat, which are melted and clarified, and put into a calabash or dish, into which they dip the flesh of the Guana as they eat it. It is remarkable that this fat, which adheres to the inside of the abdomen, imbibes the colour of the fruit the animal eats last, which I have frequently seen tinged of a pale red, yellow, or sometimes of a purple colour, which last was from eating the *Prunus maritima*, which fruit, at the same time, I took out of them. Though they are not amphibious, they are said to keep under water above an hour. When they swim, they use not their feet, but clap them close to their body, and guide themselves with their tails: they swallow all they eat whole. They cannot run fast, their holes being a greater security to them than their heels. They are so impatient of cold, that they rarely appear out of their holes but when the sun shines."

"The Guana," says Browne, in his Natural History of Jamaica, "like most of the tribe, lives a very considerable time without food, and changes

its colour with the weather, or the native moisture of its place of residence. I have kept a grown Guana about the house for more than two months: it was very fierce and ill-natured at the beginning, but after some days it grew more tame, and would, at length, pass the greatest part of the day upon the bed or couch, but it went out always at night. I have never observed it to eat any thing, except what imperceptible particles it had lapped up in the air; for it frequently threw out its forked tongue, like the Cameleon, as it walked along. The flesh of this creature is liked by many people, and frequently served up in fricasees at their tables, in which state they are often preferred to the best fowls. The Guana may be easily tamed while young, and is both an innocent and beautiful creature in that state."

The female of this species is said to be smaller than the male, and of brighter colours.

VAR.?

Horned Guana. Le Lezard cornu. *Cepede* *ov.* 2. *p.* 493.

THIS, according to *Cepede*, its first describer, is so much allied to the common Guana, that it might almost be supposed a variety of that species, which it resembles in size and general proportions, serrated back, form of scales, &c. but is destitute of the gular pouch or crest, while in front of the head, between the eyes and nostrils, are seated four rather large scaly tubercles, be-

AMBOINA GUANA.



Hatch sculp.

hind which rises an osseous conical horn or process, covered by a single scale. This Lizard is a native of the island of St. Domingo, where it is said to be very common. Mons. Cepede informs us that he had seen two specimens, one of which wanted the large tubercles on each side the head.

AMBOINA GUANA.

Lacerta Amboinensis. L. cauda tereti longa, pinna caudali radiata, sutura dorsali dentata. Schlosser de lacert. Amboinens. 1768.

Long-tailed variegated Lizard, with radiated tail-fin, and dentated dorsal suture. *Nat. Miscell. pl. 403.*

The variegated Amboina Lizard.

THIS highly remarkable species appears to have been first described by Valentyn, in his account of the East Indies, and particularly of the island of Amboina, where it is principally found; but a much more accurate description, accompanied by an exquisite figure, was published in the year 1768 by Dr. Albert Schlosser.

This Lizard appears in some degree to form a connecting link between the Guana and the Basilisk. It grows to the length of three feet, or even more, and is at once remarkable for the singularity of its appearance and the beauty of its colours. The head is rather large than small, somewhat tuberculated above, and covered with small roundish scales: the upper jaw obtuse and

somewhat inclining to a square termination; the lower is rounded: the scales surrounding the lips are larger than on other parts of the head: the eyes are moderately large; the foramina of the ears conspicuous; the mouth wide; the teeth sharp and numerous; the tongue large, fleshy, and slightly emarginated at the tip: the skin about the neck, throat, and breast, is loose or wrinkled; the body is covered with very small oblong or somewhat square scales, interspersed with much larger rounded or oval ones, scattered here and there over the sides and about the shoulders and thighs: the tail is very long, of a rounded form, and furnished above with a very broad, rising crest or upright process, scalloped, or sinuated on the edge by slight subdivisions, and internally strengthened by several bony radii resembling those in the fins of fishes: the scales on this part of the tail are larger than on the other parts: from the back of the head to the extremity of the tail runs a continued series of denticulated serratures, gradually diminishing in size as they approach the tip of the tail: the legs are moderately long, stout, and scaled in a similar manner with the body: the feet are large and strong, and are each furnished with five toes, edged on their sides with a denticulated or pectinated skin, and terminated by strong, curved claws.

The head and neck of this animal are green, variegated by transverse whitish undulations: the back and tail brown, with a slight blueish or

purplish cast; the sides and abdomen pale-brown or greyish, spotted by the round white scales before mentioned.

This Lizard, according to Valentyn, resides in the neighbourhood of rivers and other fresh waters. It is frequently observed on the banks of rising grounds, as well as on the lower kind of shrubs which grow near the water, but does not ascend the taller trees. When disturbed by the approach of men, dogs, &c. it instantly plunges into the water, and hides itself beneath the rocks or stones under the banks, from whence, however, it may be easily taken; and, when caught, does not attempt to bite, or defend itself, but seems, as it were, stupefied. It may also be caught by a noose or snare. It lays its eggs in the sand; especially near the small islets of the rivers it frequents: these eggs, while in the belly of the animal, are of a yellow colour, and are disposed into two long groups or clusters, but when laid are white, and of an oblong shape.

The male and female differ considerably in size and distribution of colours; the female being of a more obscure tinge than the male, and having but little appearance of the crest or process on the tail. This animal is more esteemed as a food than even the common Guana, and its flesh is said to be very white, sweet, and of a penetrating odor. Valentyn, who had attended to the anatomy of the animal, informs us, that it has a small triangular heart; an oblong liver, with a round gall-bladder; small reddish lungs, slightly tinged with

lead-colour; a narrow, whitish stomach, coated, or, as it were, enveloped in fat, and large intestines, in which were discovered the berries and seeds of certain aquatic shrubs, together with some small semitransparent pebbles, and a kind of worms not unlike millepedes.

Of this curious Lizard a very fine specimen occurs in the Museum of the late Mr. John Hunter.

BASILISK.

Lacerta Basiliscus. L. cauda tereti longa, pinna dorsali radiata, occipite cristato. Lin. Syst. Nat. p. 366.

Long-tailed Lizard, with radiated dorsal and caudal fin, and pointed occipital crest.

Draco arboreus volans Americanus amphibius, sive Basiliscus. Seb. Mus. 1. p. 156. t. 100. f. 1.

The Basilisk. *Nat. Misc. pl. 142.*

THE Basilisk of the ancients, supposed to be the most malignant of all poisonous animals, and of which the very aspect was said to be fatal, is a fabulous existence, to be found only in the representations of painters and poets. Without citing other descriptions, it may be sufficient to quote that of Lucan, who, with true poetic licence, represents the Basilisk exerting his terrific glance in the burning deserts of Africa, and obliging the rest of the poisonous tribe to preserve an humble distance.

“Sibilaque effundens cunctas terrentia pestes,
Ante venena nocens, late sibi submovet omne
Vulgus, et in vacua regnat Basiliscus arena.”

BASILISK.



Magn. Sculp.

But fiercely hissing through the poison'd air
The Basilisk exerts his deathful glare :
At distance bids each vulgar pest remain,
And reigns sole monarch of his sultry plain.

But the animal known in modern natural history by this name is a species of Lizard, of a very singular shape, and which is particularly distinguished by a long and broad wing-like process or expansion continued along the whole length of the back, and to a very considerable distance on the upper part of the tail, and furnished at certain distances with internal radii analogous to those in the fins of fishes, and still more so to those in the wings of the *Draco volans*, or Flying Lizard. This process is of different elevation in different parts, so as to appear strongly sinuated and indented, and is capable of being either dilated or contracted at the pleasure of the animal. The occiput or hind part of the head is elevated into a very conspicuous pointed hood or hollow crest.

Notwithstanding its formidable appearance, the Basilisk is a perfectly harmless animal, and, like many other of the Lizard tribe, resides principally among trees, where it feeds on insects, &c. It has long ago been admirably figured in the work of Seba, and as it is an extremely rare species, has sometimes been considered (from the strangeness of its form) as a fictitious representation. There is, however, in the British Museum, a very fine specimen, well preserved in spirits, and which fully confirms the excellency of Seba's figure; from which, in all probability, Linnæus himself

(who never saw the animal) took his specific description. The colour of the Basilisk is a pale cinereous brown, with some darker variegations towards the upper part of the body. Its length is about a foot and half. The young or small specimens have but a slight appearance either of the dorsal or caudal process, or of the pointed occipital crest. The Basilisk is principally found in South America, and sometimes considerably exceeds the length before mentioned, measuring three feet, or even more, from the nose to the extremity of the tail. It is said to be an animal of great agility, and is capable of swimming occasionally with perfect ease, as well as of springing from tree to tree by the help of its dorsal crest, which it expands in order to support its flight.

GALEOTE LIZARD.

Lacerta Calotes. L. cauda tereti longa, dorso antice capiteque postice dentato. Lin. Syst. Nat. p. 367.

Lizard with long round tail; the back dentated on the fore part, and the head on the hind part.

Lacertus Ceilonicus amphibius, seu Leguana Soa Ajer dicta. Seb. 1. p. 149. t. 95. f. 3, 4.

Lacerta Ceilonica, &c. Ascalobotes Græcis dicta. Seb. 1. p. 146. t. 93. f. 2.

THIS species is considerably allied to the common Guana in habit or general appearance; but is of much smaller size, rarely exceeding the length of a foot and half from the tip of the nose to the extremity of the tail. It is also destitute

GALEOTE LIZARD.



MARBLD LIZARD.

W. H. B. 1851
J. H. B. 1851
J. H. B. 1851

of the very large gular pouch, so conspicuous in that animal; instead of which it has merely a slight inflation or enlargement on that part. In colour it occasionally varies, like most of this tribe; but is commonly of an elegant bright blue, variegated by several broad, and somewhat irregular white or whitish transverse bands on each side of the body and tail. From the hind part of the head, to the lower part of the back, runs a strongly serrated crest, the divisions of which are long and sharp-pointed: the region of the head, on each side, behind the eyes and ears, and more particularly round the latter, is furnished with several serratures of a similar appearance to those on the back; forming one of the principal characteristics of this species. The scales are larger in proportion than those of the Guana, sharp-pointed, and marked by a pretty strong carina: the limbs are rather slender than stout, and the toes more remarkably so: the tail exceeds the body very considerably in length, and terminates acutely.

This species has been well represented in the work of Seba, who has figured several varieties, differing in size and colour. It is a native of the warmer regions both of Asia and Africa, and is found in many of the Indian islands, and particularly in Ceylon, in which it is common. According to the Count de Ceperde it is also found in Spain, &c. and is said by that author to wander about the tops of houses in quest of spiders; and he observes, that it is even reported to prey on

rats, and to fight with small serpents in the manner of the common Green Lizard and some others.

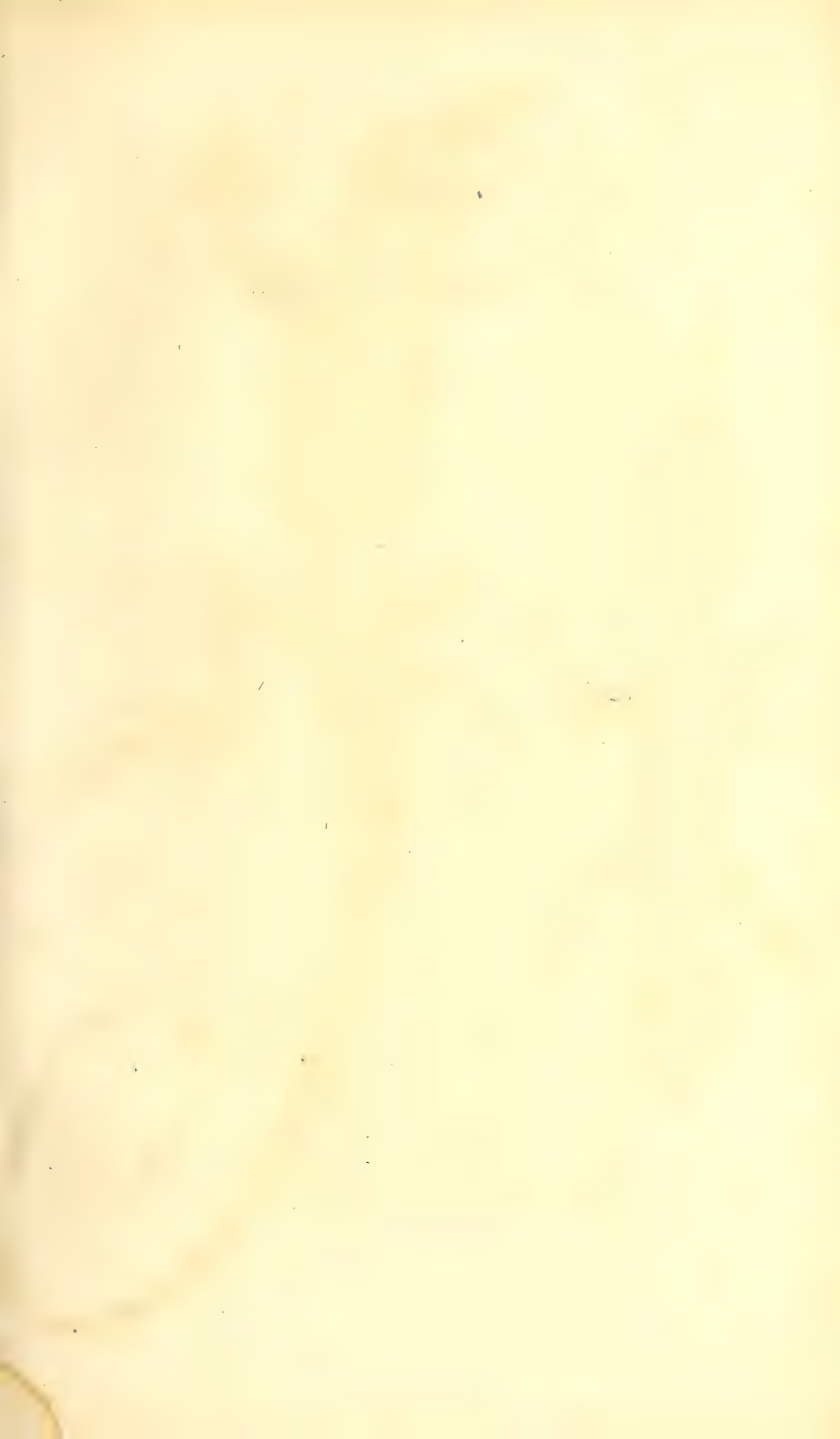
AMERICAN GALEOTE,

Lacerta Agama. *L. cauda tereti longa, collo supra capiteque postice aculeato, occipitis squamis reversis.* Lin, Syst. Nat. p. 367.

Lizard with long round tail; the neck above and the head behind aculeated; the scales of the hind-head reversed,

Salamandra Americana, &c. Seb. 1, p. 169. t. 107,

THIS is in some respects allied to the Calotes, but differs in wanting the very conspicuous dorsal serratures, instead of which it has only a small denticulated carina on that part; the head is larger in proportion, and is covered on the back part with elongated or sharp-pointed scales, some of which are more or less reversed at their extremities; the body is coated with small scales, with several larger ones of a rounded form scattered here and there on the sides; the tail is long, and verticillated with stages of sharp-pointed scales; the whole animal is of a less slender and elegant aspect than the preceding, and is commonly of a brown or lead-coloured cast, clouded here and there with deeper and lighter variegations. It is a native of South America and some of the West-Indian islands, and sometimes grows to a very considerable size. The male is said to differ from the female in having the dorsal crest composed of longer spines, extending almost to the lower part





BROAD-TAILED LIZARD.



MURICATED LIZARD.

Thick sculp.

of the back, whereas in the female they scarce reach farther than the shoulders.

VAR. ?

Lacerta Muricata. *L. cauda tereti longa, corpore griseo, squamis carinatis mucronatis.*

Muricated Lizard. *L.* with long rounded tail, body greyish, scales carinated and sharp-pointed. *White's Voy.* p. 244. pl. 31. f. 2.

THIS variety, or the Brown Australasian Lizard, can hardly be considered as specifically distinct, though I have myself described it as such in Mr. White's Journal of a Voyage to New South Wales. It measures more than a foot in length*; its general colour being a brownish grey, the whole upper part marked with transverse dusky bars, most conspicuous on the legs and tail, which latter is very long: the scales on every part of the animal are of a sharp form, and furnished with a prominent line on the upper surface: towards the back part of the head they almost run into a kind of weak spines: the feet are furnished with moderately strong and sharp claws. The chief difference between this and the first described kind, exclusive of colour, seems to be the defect of the reversed scales on the back part of the head.

* Specimens have sometimes been seen of much larger size.

BICARINATED LIZARD.

Lacerta Bicarinata. L. cauda compressa, supra bicarinata mediocri, dorso quadrifariam carinato-striato. Lin. Syst. Nat. p. 361.

Lizard with four rows of strong carinated scales on the back, and tail of moderate length.

La Dragonne. *Cepede ovip. 1. p. 243. pl. 16.*

THIS species, which in the work of the Count de Cepede* seems in some degree confounded with the *Dracæna*, is in general of much smaller size, the specimen figured in the work above mentioned measuring but two feet five inches from the tip of the snout to the end of the tail. In its habit it bears some resemblance to a Crocodile in miniature, having hard, tuberculated, and carinated scales on the upper parts of the body, and two rows of scales more prominent than the rest, running from the upper part of the back to the tail, at which part they become confluent, and are continued in the form of a serrated crest, to the tip: the head is small; the mouth wide; the snout sharpish; the teeth pretty numerous; those in front of the mouth small, those situated backwards larger, and more obtuse; the tongue forked. The colour of this animal, according to Cepede, is a reddish brown more or less tinged with

* *Lacertam* is (Cepede) *dracænam* Linnæi nobis promittit et pingit in tab. 16. quæ plane est *bicarinata* Linnæi, cujus pictura accurata hucusque caruimus: quapropter imprudentiæ Galli gratias agendas potius quam levitatem ejus taxandam esse censeo. —*Schneid. Amph. Phys. Sp. Alt. p. 40.*

greenish in some parts. It is a native of South America, where, like the Guana, and some other Lizards, it is occasionally used as a food: the eggs also are said to be much esteemed for the same purpose. It frequents woody and marshy regions. Mons. de la Borde, a correspondent of the Count de Ceppe, kept one alive for some time: it often continued in the water for hours together, hiding itself when disturbed or affrighted, but delighted in coming out occasionally, and basking in the sun.

VAR. ?

In Brasil is said to be found a large lizard, much resembling the Crocodile, which readily climbs trees, and seems, according to the Count de Ceppe, to be no other than a variety of the preceding; from which it differs in being of a darker colour, and having shorter claws. It is called by the title of *Ignarucu*.

The *L. bicarinata* is described by Linnæus, in the *Systema Naturæ*, as a small species. We must, therefore, either suppose Linnæus to have described a very young or small specimen, or the species above described to be in reality different from the *bicarinata*, though marked by similar characters: or it is even possible that it may be a sexual difference of the *Dracæna*, with which the Count de Ceppe appears to confound it by quoting the figure of Seba as representing the same animal.

MONITORY LIZARD.

Lacerta Monitor. *L. cauda ancipiti, corpore mutico nigro, maculis albis ocellatis.*

Black Lizard, with very long compressed carinated tail, and body marked by transverse rows of white ocellated spots.

Lacerta Monitor. *Lin. Syst. Nat. p. 360.*

Lacerta Amboinensis elegantissima. *Seb. 1. p. 147. t. 93. f. 1, 2, 3.*

Lacerta major *Tilcuetzpallin* in Nova Hispania dicta. *Seb. 1. p. 152. t. 97. f. 2.* L. Tupinambis. 2. *t. 86.* L. Tejuguacu. 2. *t. 105.* L. Mexicana. 2. *t. 30.* L. Ceilonica. 2. *t. 49.*

Le Tupinambis. *Cepede ovip. p. 251. pl. 17.*

THE Monitor, or Monitory Lizard, is one of the most beautiful of the whole tribe, and is also one of the largest; sometimes measuring not less than four or five feet from the nose to the tip of the tail. Its shape is slender and elegant, the head being small, the snout gradually tapering, the limbs moderately slender, the tail laterally compressed, and insensibly decreasing towards the tip, which is very slender and sharp. Though the colours of this Lizard are simple, yet such is their disposition, that it is impossible to survey their general effect without admiration. In this respect, however, the animal varies, perhaps, more than most others of its tribe. It is commonly black, with the abdomen white, the latter colour extending to some distance up the sides, in the form of several pointed bands, besides which the whole body is generally ornamented by several transverse bands consisting of white annular spots, while the head

MONTFORT LIZARD.



Reith sculp.

is marked with various streaks of the same colour, the limbs with very numerous round spots, and the tail with broad, distant transverse bands. In others the spots forming the lateral bands are simple instead of annular; and in others the annuli or white rings are themselves composed of small white spots, which are likewise often scattered here and there over the black ground-colour. The ground-colour in some, instead of being black, is of a deep ferruginous brown. All, however, agree so far in the general disposition of the variegations, that it is not easy to mistake the species for any other.

This elegant animal is a native of South America, where it frequents woody and watery places, and, if credit may be given to the reports of some authors, is of a disposition as gentle as its appearance is beautiful. It has even gained the title of Monitor, Salvaguarda *, &c. from its pretended attachment to the human race, and it has been said that it warns mankind of the approach of the Alligator by a loud and shrill whistle.

VAR. ?

Lacerta Varia. Variegated Lizard. *White's Journ. of Voy. to New South Wales*, p. 253. pl. 38. *Nat. Misc.* pl. 83.

So nearly does this animal approach to the former, that it may be doubted whether it should not

* These names are also applied by some authors to different species, as the *Teguixin*, &c.


be considered as a variety rather than a truly distinct species. It differs, however, in colour, and in some degree in the disposition of its variegations, which are generally pale yellow instead of white, and in some specimens even of a bright gold-colour. The markings on the body also, instead of the general ocellated pattern of the preceding, consist rather of rounded or slightly subangular spots and variegations: the limbs, as in the preceding, are marked either with numerous bands or spots, and the tail is banded: the claws are very large and strong. This Lizard is a native of New Holland.

SPINE-TAILED LIZARD.

Lacerta Acanthura. *L. gula subtus plicata, corpore squamis minutis tecto, cauda longa squamis carinatis spinoso-trifidis verticillata.*

Lizard with the throat plaited beneath; the body covered with minute scales; the tail long, and verticillated with carinated triple-spined scales.

A SPECIMEN of this animal is preserved in the British Museum, where it is distinguished by the title above mentioned. Its length is about a foot and half, but it probably grows to a considerably larger size. The head, which resembles that of the *Ameiva* and *Teguixin* in shape, is covered with somewhat small subhexagonal scales, and is very distinctly marked off, as it were, from the body: beneath the throat is a very conspicuous transverse

plait, as in the *Ameiva*: the whole skin also about the neck, throat, and beginning of the sides, is, in this specimen at least, remarkably lax, and it is probable that in the living animal the skin beneath the throat may have a kind of pouched appearance, though entirely without any middle carina on that part: the other parts of the body, both above and below, are covered with very small scales; of which, however, those of the under parts are rather larger than those of the upper. From the beginning of the neck to the origin of the tail runs a series of short denticulations, forming a serrated crest of very slight elevation: the tail is very long, and strongly marked into numerous verticilli or rings, composed of very long and very strongly carinated scales; each terminating in a lengthened point  and thus causing a spiny appearance throughout the whole length of that part: the feet are all pentadactylous, and the toes rather long; especially those of the hind feet: the claws strong and sharp. The colour of this species on the upper parts is glaucous, variegated with a few small and somewhat indistinct clouds and marblings of a whitish cast: the tail and under parts are of a pale or yellowish white colour.

This species seems much allied to the *Quetzpaleo* of Seba, 1. p. 152. t. 97. f. 4. which is generally supposed to represent the *Azurea* of Linnæus.

SHARP-TAILED LIZARD.

Lacerta Lophura. L. corpore squamis inæqualibus vestito, dorso serrato, cauda longa compresso-carinata.

Lizard with the body covered by dissimilar scales; the back serrated; the tail long, and compresso-carinated.

A VERY large species: at first view much resembling the *Teguixin* in size, colour, &c. but is coated with scales of dissimilar size on different parts; large, rounded, and oval ones being scattered here and there among the smaller: tail long, carinated above, compressed, and sharp-pointed: both back and tail serrated throughout their whole length. In the British Museum, and in that of Dr. William Hunter.

 DRACÆNA LIZARD.

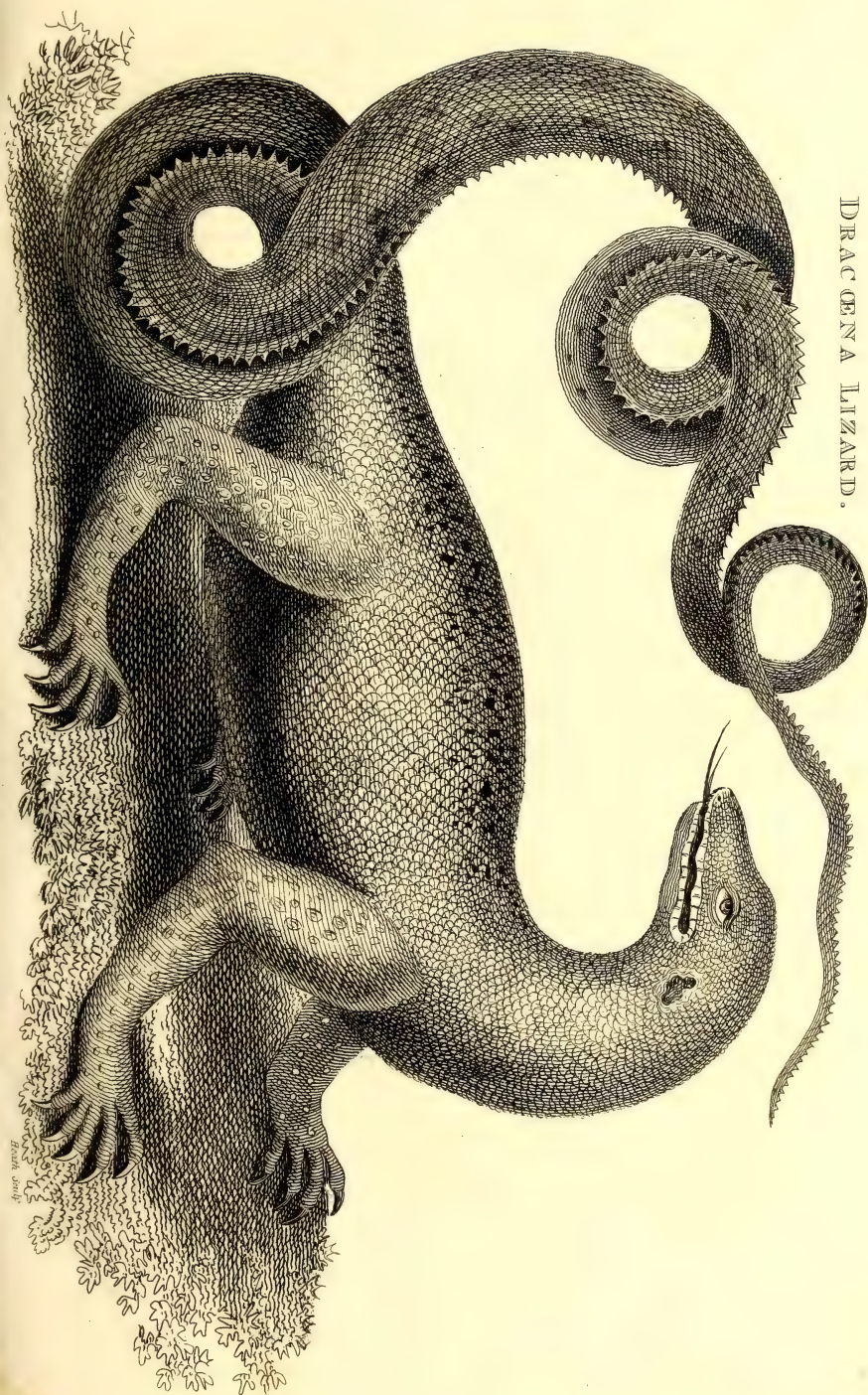
Lacerta Dracæna. L. cauda supra denticulata longa, corpore lævi, digitis subæqualibus. Lin. Syst. Nat. p. 360.

Large long-tailed Lizard, with smooth body and tail denticulated along the upper part.

Lacerta Americana maxima Cordylus & Caudiverbera dicta. Seb. 1. p. 158. t. 101.

THE *Dracæna* may be considered as one of the largest of the Lizard tribe; much exceeding the *Guana* in the general size of the body, as well as in the proportion of its limbs and tail. It is a native of several parts of South America, as well as of some of the Indian islands, and is said to be

DRACÆNA LIZARD.



more esteemed in some countries as an article of food than the Guana. The head is small, and of an elegant form, the snout tapering in such a manner as to bear a resemblance to that of an Italian greyhound: the teeth are small and numerous, and the tongue forked: the openings of the ears large, and surrounded by a well-defined scaly border: the proportions of the neck and limbs are elegant though strong, and the body is moderately thick: the tail is of a great length, though in a fine specimen, preserved in the Leverian Museum, it is not quite so long in proportion, as represented by Seba, whose excellent figure is copied in the present work. The colour is brown, with a slight cast of chesnut, palest on the abdomen and insides of the limbs; the outsides of which are marked by numerous, small, pale, or yellowish spots. The whole animal is smooth, or destitute of prominences on the skin, which is covered with small, ovate, and, in some parts, slightly subquadrate scales, largest on the outsides of the limbs, the back, and the abdomen: along the upper edge of the tail runs a continued series of short, triangular denticulations, as shewn in the engraving: the feet are moderately strong, and the toes are armed with sharp, crooked claws. This animal has been described by some of the older writers on natural history, under the name of *Cordylus*, or Cordyl; a name which has also been applied to different species.

VAR. ?

IN the Leverian Museum is a specimen, which differs in being of a very pale brown colour, variegated on the body and tail by several deep brown transverse bands, among which, as well as on the abdomen and limbs, are interspersed many smaller variegations and spots of similar colour: the tail much shorter than in the preceding, though of similar thickness or relative proportion to the body.

 SUPERCILIOUS LIZARD.

Lacerta Superciliosa. L. cauda carinata, dorsa superciliisque squamis ciliatis. Lin. Syst. Nat. p. 360.

Lizard with carinated tail; the back and eyebrows ciliated with upright lanceolated scales.

Lacerta Ceilonica cristata & pectinata. Seb. 1. p. 147. t. 94. f. 1.

THIS Lizard, in its general appearance, is somewhat allied to the Guana, and more especially to the horned Guana of Cope; having, like that animal, the appearance of a pair of sharp-pointed, horn-like processes above and beyond each eye, between which are also situated a certain number of aculeated scales; while from the back of the head to the tip of the tail runs a series of short or slightly elevated serratures: the scales about the edges of the mouth and on the tip of the nose are,

SPERMATOPHYTES LIZARD.



SCOTTED LIZARD.



as usual in most Lizards, larger than on the rest of the animal: the tongue is large and rounded: the body is covered with small subacuminated scales, those on the tail being somewhat larger: the limbs are rather slender, and the tail of moderate length. Seba figures two specimens of this Lizard, one of which has several rounded scales, of different sizes, interspersed here and there on the sides of the body, and which are not visible on the other.

This is an Asiatic species, and is also found in the Indian islands. The colour of one of Seba's specimens, both of which, he informs us, came from Amboina, was pale yellow, tinged with blueish variegations: the other with brown and whitish ones. The size is that of a small Guana, measuring from twelve to about sixteen inches from the nose to the tip of the tail.

SCUTATED LIZARD.

Lacerta Scutata. L. cauda compressa mediocri, sutura dorsali dentata, occipite bimucronato. Lin. Syst. Nat. p. 360.

Lizard with compressed tail of middling length, dentated dorsal suture, and two pointed processes at the back of the head.

Salamandra prodigiosa Amboinensis scutata. Seb. 1. p. 173. t. 109. f. 3, 4.

THE *L. scutata* is allied in shape, size, and general appearance, to the former, but has a somewhat larger head in proportion. It is principally distinguished by a row of scales more elevated

than the rest, which pass over each eye; a sort of ridge or prominent edge being continued from those parts as in the Chameleon, towards the back of the head, where they unite, and are continued in form of a short denticulated crest, down the middle of the back to the beginning of the tail, which is much longer than the body. The body is covered with moderately small acuminated scales; the limbs and tail with somewhat larger ones. The colour of this Lizard is brown; more or less deep in different individuals, and clouded or mottled with a few variegations of a still deeper cast. It is a native of the island of Ceylon.

SMOOTH-CRESTED LIZARD.

Lacerta Principalis. *L. cauda subcarinata, crista gulæ integerrima, dorso levi.* *Lin. Syst. Nat. p. 360.*

Lizard with subcarinated tail, plain-edged gular crest, and smooth back.

Lacerta Ceilonica maculis albis & nigris notata. *Seb. 2. p. 32. f. 3.*

Le Large-Doigt. *Cepede ovip. p. 263.*

THE *L. Principalis* is rather a small species, scarce exceeding the length of eight or nine inches from the nose to the extremity of the tail. Its general form is rather slender; the head small; the snout taper; the back smooth, or destitute of serratures, a sharpened carina only running along the upper part of the tail: the throat is furnished with a gular crest which is of a smooth or rounded

outline: the scales on the whole animal are very small: the tail long, and the toes, as in some other lizards, somewhat dilated on each side towards their extremities. The colour of the animal is blue. It is a native of South America.

VAR. ?

Lacerta bimaculata. *L. cauda carinata denticulata, corpore duplo longiore, digitis palmarum plantarumque lobatis*. *Sparm. Nov. Act. Stock.* 3. t. 4. *Lin. Syst. Nat. Gmel.* p. 1059.

THIS is, according to Mr. Schneider, no other than a variety of the *Principalis*, of a blue colour, spotted here and there with black, and having two larger spots of that colour over the shoulders. It is a native of St. Eustatia, and is also met with in Pennsylvania. It is said to have a hissing or whistling voice.

VAR. ?

Le Roquet. *Cepede ovip.* p. 397. *pl.* 27.

THIS appears much allied to the *Principalis*, which it resembles in size and habit, as well as in having the last joints of the toes somewhat enlarged or lobed on each side, but is destitute of the gular crest. In its manners it is said to resemble the European green lizard, frequenting gardens, among trees, &c. moving nimbly about, and commonly holding its tail in an elevated position, curving over its back. It feeds on the

smaller insects, of which it destroys great multitudes. When tired with exercise, or oppressed with heat, it is said to hold open its mouth, and pant, with exerted tongue, in the manner of a dog. Its colour is a pale yellowish brown, with deeper and lighter variegations.

STRUMOUS LIZARD.

Lacerta Strumosa. *L. cauda tereti longa, pectore gibbo protenso.*
Lin. Syst. Nat. p. 368.

Lizard with long round tail, and gibbose projecting breast.
Salamandra Mexicana strumosa. Seb. 2. t. 20. f. 4.

THIS is a small species, about the size of the *Principalis*, and is entirely smooth or destitute of any dorsal carina or serratures, but is furnished with a large, flattish gular pouch or crest of a pale red colour, while the rest of the animal is of a pale blueish grey, with a few slight variegations of a more dusky tinge: the tail is much longer than the body, and is of similar colour, with a few obscure transverse bands: the limbs are moderately slender, and the whole habit is in some degree similar to that of the *Principalis*. It is a native, according to Seba, of South America.

MARBLED LIZARD.

Lacerta Marmorata. L. cauda tereti longa, gula subcristata antice dentata, dorso lævi. Lin. Syst. Nat. p. 368.

Lizard with long round tail, subcristated throat, and smooth back.

Lacerta Chalcitica marmorata ex Gallæcia. Seb. 2. p. 79. t. 76. f. 4. ?

Le Marbré. *Cepede ovip. p. 394. pl. 26.*

THE Marbled Lizard is a moderately small species, measuring about a foot in total length, or something more: its habit is slender and elegant: the head rather small; the snout taper; the limbs slender, and the tail very long in proportion. The whole body is covered with small ovate scales, the back having a slight or scarce perceptible carina of rather sharper scales than on the other parts, and which become rather more apparent as they approach the upper part of the tail: beneath the throat is a slightly protuberant crested and somewhat dentated skin: the feet are formed nearly as in the *Principalis*, having slender toes, with the ultimate joints a very little dilated. The colour of this species is pale blue, variegated with undulating transverse fasciæ of a whitish cast: the belly is of a pale rose-colour. It is a native of America and the West-Indian islands, and, according to Linnæus, of India. The gular protuberance in the female is not perceptibly denticulated: the tail in both is marked by three or

four slightly rising or carinated longitudinal lines. This species is well figured in the work of the Count de Ceppe.

UMBRE LIZARD.

Lacerta Umbra. *L. cauda tereti longa, nucha subcristata, occipite calloso, dorso striato.* Lin. Syst. Nat. p. 367.

Lizard with long, round tail, neck subcristated above, hind-head callous, and back striated.

Iguana sepiformis. Laur. Amph. p. 47.

A MIDDLE-SIZED, or rather small species: native of North America: first described by Linnæus in the Museum Adolphi Friderici. Body covered with scales carinated and pointed at the tips, and down the back runs a carina formed by similar scales, somewhat more strongly marked: head of an obtuse and somewhat rounded form, and marked on the hind part by a large, callous, bare spot: beneath the throat a strong plait or furrow: body clouded with deeper and lighter shades, and the tail of considerable length. This seems a species very little known.



AZURE LIZARD.

Cordyles, with either denticulated or spiny scales on the body or tail, or both.

PELLUMA LIZARD.

Lacerta Pelluma. L. cauda verticillata longiuscula, squamis rhomboideis. Lin. Syst. Nat. Gmel. p. 1060. Molin. Chil. p. 190.

Lizard with longish verticillated tail, and rhomboid scales.

THIS is one of the middle-sized Lizards; the total length being nearly two feet, and the length of the body and tail nearly equal. It is a native of Chili, where it is said to inhabit hollows under ground. It is covered on the upper parts with very minute scales, and is beautifully variegated with green, yellow, blue, and black: the under parts are of a glossy yellowish green: the tail long and verticillated by rows of rhomboid scales. The skin of this Lizard is said to be used by the Chilians for the purpose of a purse.

AZURE LIZARD.

Lacerta Azurea. L. cauda verticillata brevi, squamis mucronatis. Lin. Syst. Nat. p. 362.

Lizard with short tail, verticillated with mucronated scales.

Lacerta Africana elegantissima. Seb. 2. p. 62. t. 62. f. 6.

Lacerta Brasiliensis Quetzpaleo, &c. Seb. 1. p. 152. t. 97. f. 4. ?

THE colour of this species, in its natural or recent state, seems to be an elegant pale blue, fasciated on the body and tail with several transverse

and somewhat alternate bands either of black or very deep blue; but this is most conspicuous in the smaller specimens or varieties. It also appears to be sometimes met with of a plain colour, or with only a pair of fasciæ on the upper parts of the body, as in the specimen figured on the annexed plate. The head is rather obtuse; the body moderately thick, and covered as well as the limbs, with very small smooth scales: the tail, on the contrary, which is of moderate length, is very distinctly and strongly verticillated by rows of large carinated scales, the extremities of which project considerably, so as to form so many spiny points. In the smaller fasciated varieties the tail is shorter in proportion than in larger plain ones. A beautiful specimen of this kind, of the length of a very few inches, occurs in the Leverian Museum.

The large variety is a native of South America: the smaller of many parts of Africa.

CORDYLE LIZARD.

Lacerta Cordylus. L. cauda verticillata brevi, squamis denticulatis, corpore lævigato. Lin. Syst. Nat. p. 361.

Lizard with smooth body, and short tail verticillated with denticulated scales.

Lacertus Africanus cauda spinosa. Seb. 1. p. 136. t. 84. f. 3, 4.

Lacerta nigra Africana. Seb. 2. p. 62. t. 62. f. 5.

THE Cordyle Lizard is so nearly allied to the Azurea, that on a cursory view it might easily be mistaken for the same species. It differs, how-



ROUGH LIZARD.

Heath, July

ever, in having the body covered by much larger scales, which are also of an oblong-square form; and the tail, which does not much exceed the body in length, is verticillated by rows of very large scales of similar form, strongly carinated, and denticulated at their extremities. The colour of the animal is sometimes blueish, and sometimes of a dusky or livid brown: its total length is about ten inches.

ROUGH LIZARD.

Lacerta Stellio. L. cauda-verticillata mediocri, squamis denticulatis, capite corporeque muricato. Lin. Syst. Nat. p. 361.

Lizard with verticillated tail of middling length, with denticulated scales; the body and head muricated.

Lacerta aculeata promontorii bonæ spei. Seb. 2. p. 10. t. 9. f. 6.

THIS species is remarkable for the unusually rough or hispid appearance of its whole upper surface; both body, limbs, and tail, being covered with pointed scales, projecting here and there to a considerable distance beyond the surface, so that it appears muricated with spines: the tail is rather short than long, and is verticillated with rows of pointed scales. The general colour of the animal is a pale blueish brown, with a few deeper and lighter transverse variegations: its general length is about eight inches. It is a native of many parts of Africa.

It may be here observed, that the Lizard which we may suppose to have been emphatically termed

Stellio, by the ancients, from its being marked with spots resembling stars, seems at present unknown. It is, however, observable, that in one of Seba's plates a species occurs which is actually marked with well-defined or regular star-shaped spots.

Mr. Schneider considers the Lizards called Geckos as the true Stelliones.

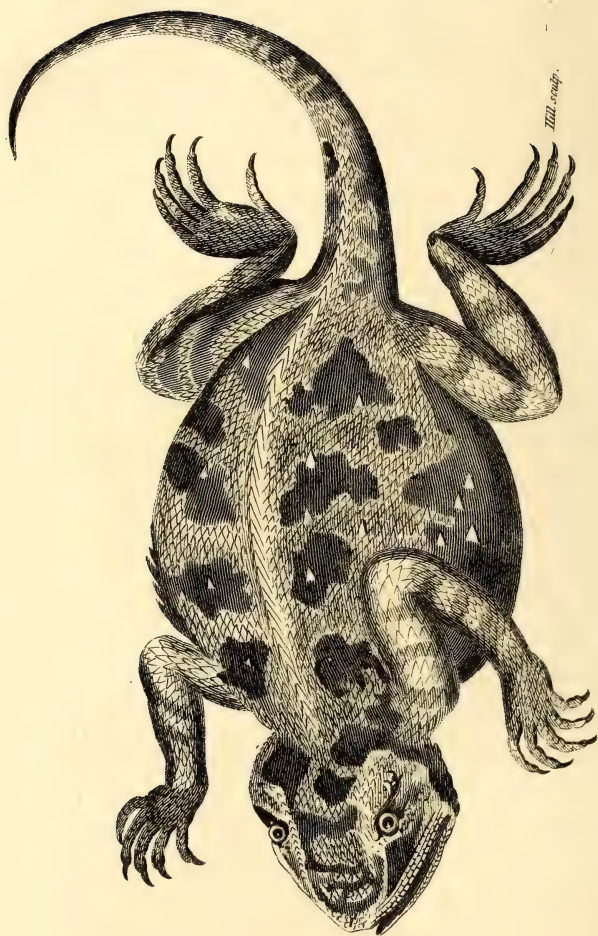
ANGULATED LIZARD.

Lacerta Angulata. *L. cauda hexagona longa, squamis carinatis mucronatis.* Lin. Syst. Nat. p. 364.

Lizard with long hexagonal tail, with carinated and mucronated scales.

A SMALL species, first described by Rolander. Head naked, marked by several unequal, elevated wrinkles, and truncated, as it were, behind, where it joins with the body: beneath the throat two large rounded scales: body covered with carinated scales, except on the belly, where they are smooth: tail longer than the body, and strongly marked or angulated by six longitudinal carinæ: colour brown: native of America.





ORBICULAR LIZARD.

ORBICULAR LIZARD.

Lacerta Orbicularis. *L. supra muricata cauda tereti mediocri, abdomine subrotundo.*

Lizard with muricated scales, short round tail, and broad rounded body.

Lacerta orbiculare. *L. cauda tereti mediocri, vertice trimuricato, abdomine subrotundo.* *Lin. Syst. Nat. p. 365.*

Lacertus orbicularis spinosus, &c. Seb. 1. p. 134. t. 73. f. 1, 2.

THIS remarkable species may be said to connect, in some degree, the Toad and Lizard tribes, having the large, ventricose body of the one, with the limbs and tail of the other. Its general size is as represented on the annexed plate, and its colour a dusky brown, variegated with deeper and lighter shades: along the back runs a carina of sharp-pointed scales, and the whole upper surface is covered with somewhat spiny or muricated ones of different sizes: the under parts are coated by flat, pointed, smooth scales, rather larger than those on the upper parts.

This animal is a native of South America, and is one of the rarer species, being not often seen in collections.

Lizards proper, smooth, and the greater number furnished with broad square plates or scales on the abdomen.

GREEN LIZARD.

Lacerta Agilis. L. cauda verticillata longiuscula, squamis acutis, collari subtus squamis constructo. Lin. Syst. Nat. p. 363.

Green Lizard, with minute dusky variegations, a collar of large scales beneath the neck, and long verticillated tail,

Lacertus viridis. Aldr. Quadr. Ovip. 634. Raj. Quadr. 264.

Lacertus vulgaris ventre nigro maculato. Raj. Quadr. 264.

THIS elegant species, which is found in all the warmer parts of Europe, and which seems pretty generally diffused over the ancient continent, sometimes arrives at a very considerable size, measuring more than two feet to the extremity of the tail: its more general length, however, is from ten to fifteen inches. In its colours it is the most beautiful of all the European *Lacertæ*, exhibiting a rich and varied mixture of darker and lighter green, interspersed with specks and marks of yellow, brown, blackish, and even sometimes red. The head is commonly of a more uniform green than the rest: the under part of the animal, both on the body and limbs, is of a pale blue-green cast: the head is covered with large angular scales; the rest of the upper parts with very small ovate ones: the tail, which is commonly much longer than the body, is marked into very numerous verticilli, or rings of oblong-square scales, slightly bifid at their extremities: beneath the

GREEN LIZARD.



Hatch sculp.

throat is a kind of collar, formed by a row of scales of much larger size than the rest: the abdomen is covered, down its whole length, with six rows of broad transverse scales or plates, and the under surface of the limbs is also covered with similar scales: along the insides of the thighs* runs a row of papillæ or tubercles, commonly about thirteen in number, which are also found in many other lizards belonging to different sections of the genus, and which probably assist the animal in climbing, or clinging to the stems and branches of vegetables, &c.: the tongue is moderately long, broad at the base, bifid towards the tip, and covered on its broad part with numerous rows of minute sharp papillæ pointing backwards, and thus the better enabling the animal to retain and swallow its prey, which consists chiefly of insects, small worms, &c. The Green Lizard is found in various situations, in gardens, about warm walls, buildings, &c. and is an extremely active animal, pursuing with great celerity its insect prey, and escaping with great readiness from pursuit when disturbed. If taken, however, it is soon observed to become familiar, and may even be tamed to a certain degree; for which reason it is considered as a favourite animal in many of the warmer parts of Europe. It appears to run into numerous varieties both as to size and colour, but in all these states the particular characteristics of the species are easily ascertained.

* This is always to be understood as relating to the hind thighs only.

VAR. ?

Smaller, or grey Lizard.

Scaly Lizard. *Brit. Zool.* 3. p. 20. pl. 2. f. 2.

Little Brown Lizard. *Edw. pl.* 225.

THIS is found in many parts of Europe, where the larger or green kind is not to be discovered. It is generally of the length of about six or eight inches, and is of a pale greyish or greenish brown colour, with a pair of dusky or deep brown dorsal or lateral stripes, speckled with small whitish spots, and accompanied by a few yellowish variegations: the under parts are of a very pale blueish or whitish green, and sometimes yellowish. This variety is found in our own country, and is occasionally seen basking, during the hotter part of the summer, about the roots of trees, old walls, &c. &c. in pursuit of insects, and generally escaping with great readiness, if pursued. This, as well as the former kind, has sometimes been used as a medicine, and has been supposed to possess peculiar virtues in leprous and some other cases.

VARIEGATED LIZARD.



VARIEGATED LIZARD.

Lacerta Teguxin. *L. variegata, cauda tereti longa, lateribus subrugosis, collo subtus plica triplici.*

Variegated Lizard, with long round tail, somewhat wrinkled sides, and a triple plait under the throat.

Lacerta Teguxin. *L. cauda tereti longa, sutura laterali plicata.*
Lin. Syst. Nat. p. 368.

Lacerta Tecuixin seu Tejuguacu. *Seb. 1. p. 96. f. 1, 2, 3.*

Lacerta Tejuguacu. *Seb. 1. t. 99. f. 1, 2.*

Sauveguard. *Mer. Surin. t. 70.*

THIS, which is by far the largest in this division of the genus, sometimes exceeds the Guana in size. It has been extremely well represented in some of the plates of Seba, as well as by the celebrated Madam Merian, who has given a figure of it at the end of her splendid work on the insects of Surinam.

The head is covered, as in the Green Lizard, with large scales or plates; the body with small and somewhat square scales, which are so disposed as to mark the sides into numerous tapering annuli or striæ, passing from the back perpendicularly downwards, and from the sides perpendicularly upwards, the narrow end of each row alternating with the broader end of the opposite one; and in the younger specimens a kind of plaited appearance, or continued lateral wrinkle appears to pass along each side of the animal: the tail, which is very long, is surrounded by extremely numerous rings of small square scales, and tapers to a slender point. The colour, in the

larger specimens, is highly beautiful, consisting of an elegant, and, in general, somewhat minute variegation of brown, blackish, and purple spots, on a pale blueish-white, and, in some parts, yellowish ground. The whole form of the animal is rather thick or plump, in comparison with many other lizards: the tongue is broad, flat, long, forked at the tip, and curiously striated on each side: the head shaped like that of the Ameiva, to which this species is nearly allied. It is a native of South America.

RED-HEADED LIZARD.

Lacerta Erythrocephala. L. atrovirens fasciis transversis nigris, abdomine longitudinaliter albo nigro & caruleo fasciato, pectore nigro, vertice rubro.

Blackish-green Lizard, with transverse black undulations, abdomen longitudinally banded with black, white, and blue, the breast black, and the top of the head red.

La Tete-Rouge. *Cepede orip.* 2. p. 493.

A MIDDLE-SIZED species; native of the island of St. Christopher; described by the Count de Cepede. Colour deep or dark green above, mixed with brown: back marked by several transverse black undulations: top of the head, and part of the sides of the neck, red: throat white; breast black: belly variegated with longitudinal black, blue, and whitish bands, and covered with square scales or plates: head covered with larger scales than the other parts: beneath the thighs a row of tubercles.

VARIEGATED LIZARD, *var.*?



STRIPED LIZARD.

Head of Ameiva
viewed from beneath

AMEIVA LIZARD.

AMEIVA LIZARD.

Lacerta carulea, albo nigroque variata, cauda longa verticillata, scutis abdominis triginta.

Blue Lizard with black and white variegations, long verticillated tail, and thirty abdominal scuta.

Lacerta Ameiva. L. cauda verticillata longa, scutis abdominis triginti, collari subtus ruga duplici. Lin., Syst. Nat. p. 362.

Great spotted Lizard. *Edw. pl. 203.*

Ameiva. Seb. 1. t. 88. f. 1, 2.

THE Ameiva is much allied to the Green Lizard in its general appearance, but is not furnished with the remarkable scaly collar by which that species is distinguished; having only a double transverse crease or plait on the same part: the head is also somewhat longer, and the snout more taper in proportion: the scales with which the upper parts of the animal are covered are extremely small, so as to be not very distinctly visible: those of the abdomen consist of square plates, as in the green lizard; and beneath each thigh is a range of tubercles. In colour the Ameiva varies considerably, but is commonly blue or blueish-green above, with somewhat irregular variegations of black and white, which are sometimes disposed in streaks, and sometimes in spots, or patches; and commonly in such a manner as to leave several whitish or pale-blue round spots scattered on different parts of the body and limbs: the under parts are dusky, with more or less of a blueish cast, and often marked here and there with small whitish spots.

The Ameiva is principally found in South America, but it is also said to occur in some parts of Asia and Africa.

STRIPED LIZARD.

Lacerta Lemniscata. *L. cauda tereti longa, dorso lineis octo albidis.* *Lin. Syst. Nat. p. 369.*

Dusky-blue Lizard, with eight white lines down the back, long round tail, and limbs spotted with white.

Lacerta Brasiliensis *Taraguira.* *Seb. 2. t. 91. f. 3.*

Lacerta Brasiliensis *Tecunhana.* *Seb. 2. t. 91. f. 4.*

So closely allied is this to the *Ameiva*, that, without a careful inspection, it might be mistaken for the same species: its general size, however, is rather smaller: its colour is a dusky blue, marked above by eight longitudinal white lines or stripes, running from the head to the beginning of the tail: the sides, beneath the stripes, and the outsides of the thighs, are marked with small white spots: beneath the thighs is a range of tubercles, but there is no appearance of a crease or transverse fold under the throat: the white stripes on the back vary in breadth, and even sometimes in number, in different individuals. It is a native of Africa, and is principally found in Guinea; but is also said to be met with in some parts of India, and even in South America.

FOUR-STRIPED LIZARD.

Lacerta Quadrilineata. *L. cauda tereti longa, pedibus subungiculatis, palmis tetradactylis, corpore lineis quatuor flavis.* Lin. *Syst. Nat. Gmel.* p. 1076.

Blackish-blue Lizard, with tetradactyle fore-feet, long rounded tail, and four white or yellowish lines down the back.

CLOSELY allied to the *Lemniscata*, but a much smaller species: colour blackish blue, with four white or yellowish bands down the back: fore feet tetradactyle; hind feet pentadactyle: claws very small: tail long and taper. Described by Linnæus in the Museum Adolphi Friderici. Supposed to be a native of North America.

RIBBON LIZARD.

Lacerta Tæniolata. *L. cauda tereti longa, corpore supra tæniolis albis nigrisque, subtus albo.*

Lizard with long round tail, and body marked above with black and white stripes; beneath white.

Ribbon Lizard. *White's Journ. of Voy. to N. S. Wales*, p. 245. pl. 32.

A SMALL species, much allied to *Fasciata* and others of this division: covered entirely with smooth, rounded, imbricated scales on all parts: colour chesnut brown above; pale or whitish beneath: on the back from the head to the middle of the tail six narrow white linear stripes, the intermediate spaces of the central and lowermost stripes

being black: tail long and slender: limbs striped longitudinally with black: feet slender; five-toed: native of New Holland.

SIX-LINED LIZARD.

Lacerta Sexlineata. *L. cauda verticillata longa, dorso lineis sex albis.* *Linn. Syst. Nat. p. 364.*

Grey-brown Lizard, with long verticillated tail, and six white lines down the back.

The Lion-Lizard. *Catesb. Car. 2. t. 68.*

A SMALL species, allied to the Ameiva: colour grey, with six longitudinal lines or whitish stripes down the upper parts: beneath the throat a double crease, and beneath the thighs a row of tubercles: legs long; feet slender: tail commonly carried in an elevated manner, curving over the back, for which reason it is called the Lion-Lizard: runs very swiftly, and chiefly frequents the rocks about the sea coasts of Cuba and Hispaniola, where it is preyed on by Gulls, &c.

FASCIATED LIZARD.

Lacerta Fasciata. L. cauda tereti longiuscula, cærulea, dorso lineis quinque flavescentibus. Lin. Syst. Nat. p. 369.

Brown Lizard, with longish blue tail, and five yellowish lines down the back.

The Blue-tail Lizard. *Catesb. 2. t. 67.*

A SMALL species, seldom exceeding eight inches in length: head short; tail blue; rest of the body brown, with five equidistant yellow lines running from the nose to the tail: native of Carolina and Virginia, where it frequents hollow trees, &c. and is often seen on the ground.

 FIVE-LINED LIZARD.

Lacerta Quinquelineata. L. cauda tereti mediocri, dorso lineis quinque albidis.

Dusky Lizard, with tail of middling length, and five whitish lines down the back.

A SMALL species: colour deep brown or blackish, with five whitish dorsal stripes, continued half way down the tail: on the head six stripes: tail twice the length of the body: abdomen imbricated with striæ: native of Carolina: described by Dr. Garden.

PUNCTATED LIZARD.

Lacerta Interpunctata. *L. cauda tereti longa, dorso lineis duabus flavis, punctis nigris interspersis.* *Lin. Syst. Nat. Gmel.* p. 1075. *Mus. Ad. Frid.* p. 46.

Lizard with long round tail, and two yellow dorsal lines, with black specks interspersed.

Lacerta Africana. *Seb. 2. t. 12. f. 6.*

A SMALL species: native of Asia: head covered with large scales: body smooth and glossy, with two obscure yellowish lines distinguishing the back from the sides: down the dorsal area run six rows of black specks or points, and down each side a similar number: feet and tail also spotted in a similar manner.

RED-THROAT LIZARD.

Lacerta Bullaris. *L. viridis, cauda tereti longa, vesica gulari rubra.*

Green Lizard, with long round tail and red gular vesicle.

Lacerta Bullaris. *L. cauda tereti longa, vesica gulari.* *Lin. Syst. Nat.* p. 368.

Green Lizard of Jamaica. *Catesb. Car. 2. t. 66.*

THIS, according to Catesby, is usually six inches long, and of a shining grass-green colour. It is common in Jamaica, frequenting hedges and trees, but is not seen in houses: when approached it swells its throat into a globular form, the protruded skin on that part appearing of a bright red colour, which disappears in its withdrawn or

contracted state: this action is supposed to be a kind of menace, in order to deter its enemy ; but it is incapable of doing any mischief by its bite or otherwise.

VAR. ?

Green Carolina Lizard. *Catesb. 2. pl. 65.*

THIS, which appears to resemble the former in every particular, except in the extensile gular skin, is said by Catesby to be very common in Carolina, frequenting houses, and becoming in a degree familiar, so as to sport about the tables and windows, catching flies with great dexterity, appearing chiefly in summer, and on the approach of cold weather retreating to its winter quarters, lying torpid in the hollows of trees, &c. It is sometimes tempted to leave its retreat prematurely, and, on a change of weather, becomes so enfeebled by the cold as to perish before it regain its habitation. Its colour is observed to change very considerably, appearing of a bright green in dry hot weather, and changing to brown in cold weather: the structure of the feet in these lizards is similar to that of the *L. Principalis*, the toes being slender and somewhat dilated towards the tips. The red expansile gular pouch is perhaps peculiar to the male.

RED-TAIL LIZARD.

Lacerta Cruenta. *L. cauda verticillata supra cinerea subtus coccinea apice albicante, colli subtus plica transversa.* *Lin. Syst. Nat. Gmel. p. 1072. Pall. it. 1. p. 456.*

Brown Lizard, with seven cervical and four dorsal white stripes, a crease under the throat, and verticillated tail red beneath.

AN extremely small species, allied to the *L. velox*, but with a sharper snout: body brown above, with seven white stripes on the neck, four of which are continued as far as the tail: limbs spotted with round white spots; body white beneath, tail red beneath, and white at the tip: a row of tubercles on the thighs: native of the south of Siberia, inhabiting the country about the salt lakes.

LOBE-CHEEKED LIZARD.

Lacerta Lobata. *L. collo utrinque lobo semiorbiculato denticulato.*
Brownish Lizard, with a semiorbicular denticulated lobe on each side the neck.

Lacerta aurita. *L. cauda tereti mediocri utrinque ad latus callosis punctis aspera, plica gula transversa subgemella, oris angulis utrinque in cristam semiorbiculatam mollem scabram dentatam dilatatis.* *Lin. Syst. Nat. Gmel. p. 1073. Pall. it. 3. p. 702. t. V. f. 1.*

THIS is a middle-sized species, of a somewhat thick or ventricose habit; with the body rather depressed, and the head rounded or blunt in front: from the corners of the mouth on each side is

horizontally extended a flat, semiorbicular skin or wattle, of a red colour, with serrated edges, and reaching as far as the shoulders: the remainder of the animal is clouded with yellowish and cinereous: tail rather short than long, and roughened above, as is the whole body, with small, pointed granules: toes five, of which the three intermediate ones are serrated on the edges. This species appears to be in some degree allied to the Geckos; it is a native of the southern desert of Siberia, frequenting sandy hills, and was first described by Dr. Pallas.



SUN-GAZING LIZARD.

Lacerta Helioscopa. L. cauda imbricata basi crassa apice acuta, collo subtus plica transversa, capite callis aspero. Lin. Syst. Nat. Gmel. p. 1074. Pall. it. 1. p. 457.

Brownish Lizard, with imbricated tail, thick at the base and sharp at the tip, a transverse crease beneath the throat, and the head rough with calli.

THIS also appears to be in some degree allied to the Geckos, being of a short, thickish form and muricated on the upper parts with small tubercles: the head is blunt or rounded in front; and the neck marked by a kind of stricture: tail moderately short, and terminating acutely: colour of the upper parts grey, with brown and blueish spots and linear streaks: neck often marked above by a red spot: under parts pale or whitish, and covered with smooth, pointed scales: tip of tail

red beneath. This species is said by Dr. Pallas to be very common in the southern deserts of Siberia, where it delights to sit in hot sunny situations, with its head turned up towards the sun. It is a small species, measuring not more than a finger's length, and is extremely nimble in its motions.

TURKISH LIZARD.

Lacerta Turcica. L. cauda subverticillata mediocri, corpore griseo subverrucoso. Lin. Syst. Nat. Gmel. p. 1068.

Brown roughish Lizard, with subverticillated tail of middling length.

Small spotted grey Lizard. *Edw. pl. 204. f. 2.*

A SMALL species, first described by Edwards: native of the eastern regions: head rather large: body thickish: tail rather short, thickish at the base, and pointed at the tip: whole animal roughened on the upper surface with small granules or tubercles: colour dull brown, somewhat paler on the under parts: appears to be somewhat allied to the Geckos in general habit.

BROAD-TAILED LIZARD.

Lacerta Platura. L. griseo-fusca scabra, subtus pallida, cauda depresso-plana lanceolata, margine subaculeata.

Grey-brown rough Lizard, paler beneath, with depressed lanceolate tail almost spiny on the margin.

Lacerta Platura. Broad-tailed Lizard. White's Journ. of Voy. to New South Wales, p. 245. pl. 32. Nat. Misc. vol. 2. pl. 65.

THIS remarkable species is a native of New Holland, and is strikingly distinguished by the peculiar form of its tail, which is flat or depressed, and gradually widens from the base to a greater diameter than the body of the animal, and again gradually tapers to a sharp attenuated extremity: it is muricated, as is every other part of the upper surface of the animal, by small tubercles, which on the edges of the tail are lengthened into sharpened points: the head is large, somewhat flattened, broad at the back part, and tapers at the snout: the neck is nearly of the diameter of the body, which somewhat exceeds the tail in length: the limbs are of moderate length and rather slender than strong: the feet all pentadactyle, with slender toes, armed by curved claws. The colour of the whole animal on the upper parts, is a dusky brownish grey; beneath paler and smooth. The general length of this species seems to be from four to six inches or rather more. In habit, except in the feet, it is allied to the Gecko tribe.

PLICA LIZARD.

Lacerta Plica. L. cauda tereti longa, occipite calloso, palpebris supra excoriatis, collo lateribus verrucoso, subtus plicato. Lin. Syst. Nat. Gmel. p. 1074.

Lizard with round long tail, hind-head callous, eyebrows excoriated above, neck warted at the sides, and plaited beneath.

A SMALL species, native of India and South America: length of a finger; covered on all parts with conical scales: on each side the neck two muricated tubercles: beneath the throat a double crease: down the back a row of larger scales than the rest, and somewhat crenated: tail about twice the length of the body, covered with minute scales, and scarce distinctly verticillated: toes long, roughened beneath by sharper scales: claws compressed.

JAPANESE LIZARD.

Lacerta Japonica. L. cauda tereti longa, pedibus unguiculatis, palmis tetradactylis, dorso vittato. Lin. Syst. Nat. Gmel. p. 1076. Houttuyn. Act. Uliss. 9. p. 329.

Lizard with long round tail, unguiculated feet, tetradactyle fore-feet, and single-striped back.

A SMALLISH species: native of Japan: colour livid brown above, with a broad dentated yellow stripe from the hind head to the beginning of the tail: eyes small; eyelids large and rough: tail somewhat compressed at the tip: claws black.

NILOTIC LIZARD.

Lacerta Nilotica. *L. cauda longa extimo triquetra, corpore glabro, dorso squamarum lineis quatuor.* *Lin. Syst. Nat. Gmel.* 1075. *Hasselqu. it. p.* 311.

Lizard with long triquetrous tail, smooth body, and four lines of scales down the back.

SMALL; native of Egypt: observed by Hasselquist.

TILIGUERTA LIZARD.

Lacerta Tiliguerta. *L. cauda verticillata corpore duplo longiore, scutis abdominis octoginta.* *Lin. Syst. Nat. Gmel. p.* 1070. *Cetti. Anfib. di Sard. p.* 15.

Lizard with verticillated tail of twice the length of the body, and eighty abdominal scuta.

THIS, which is a small species, measuring between seven and eight inches in length, is allied to the green lizard, and is a native of the island of Sardinia, where it is said to be found in fields, about walls, &c. : the male is green, spotted with black; the female brown.

DESERT LIZARD.

Lacerta Deserti. *L. cauda tereti longiuscula, pedibus pentadactylis, corpore supra nigro, lineis sex albis longitudinalibus.* *Lin. Syst. Nat. Gmel. p. 1076.*

Lizard with longish round tail, pentadactyle feet, and body black above, with six longitudinal white lines.

A VERY small species: body white beneath: the stripes of the back consist of oblong spots, and between the exterior stripe and the next are five white specks: native of the *Ural* desert.

ARGUTE LIZARD.

Lacerta Arguta. *L. cauda verticillata brevi, basi crassiuscula, apice filiformi, collari squamis obsoletis plicaque sub collo duplici insigni.* *Lin. Syst. Nat. Gmel. p. 1072. Pall. it. 1. p. 456.*

Lizard with short verticillated tail, thickish at the base and filiform at the tip, with a collar of obscurely-marked scales, and a remarkable double crease under the neck.

NATIVE of the South of Siberia: described by Dr. Pallas: allied to the green lizard, but of a shorter or more ventricose form, with a sharper snout, and less numerous as well as less distinct subfemoral tubercles: colour glaucous above, with several subconfluent transverse black bands, most distinct at the base of the tail, where they are marked by ocellated spots of the ground-colour of the back: under parts white.

ALGERINE LIZARD.

Lacerta Algira. *L. cauda verticillata longiuscula, corpore lineis utrinque duabus flavis.* Lin. Syst. Nat. Gmel. p. 1073.

Lizard with longish verticillated tail, and two yellow lines on each side the body.

A SMALL species, of about a finger's length: above brown, beneath yellowish: back covered with carinated scales, and bounded on each side by a yellow line, separating the abdomen from the upper parts. Native of Algiers.

 SWIFT LIZARD.

Lacerta Velox. *L. cauda verticillata longiuscula, collari subtus squamis constructo, corpore supra cinereo, strigis quinque longitudinalibus dilutioribus punctisque fuscis vario, ad latera nigro maculato & cærulescente punctato.* Lin. Syst. Nat. Gmel. p. 1072. Pall. it. 1. p. 457.

Lizard with longish verticillated tail, a scaly collar beneath the neck; cinereous body, with five longitudinal paler bands, variegated with black specks; the sides spotted with black, and speckled with blue.

MUCH allied to the *L. agilis*, but much smaller, and more slender: hind feet marked with orbicular spots: native of Siberia, wandering about in sunny situations among stones, &c. when disturbed, moves off with extreme celerity.

URAL LIZARD.

Lacerta Uralensis. L. cauda tereti longiuscula, collo subtus plicato, pedibus omnibus pentadactylis, dorso ex cinereo livido, rugoso & subverrucoso. Lin. Syst. Nat. Gmel. p. 1073. Lépéchin. it. 1. p. 317. t. 22. f. 1.

Lizard with longish round tail, neck plaited beneath, all the feet pentadactyle, and back livid, rugose, and subverrucose.

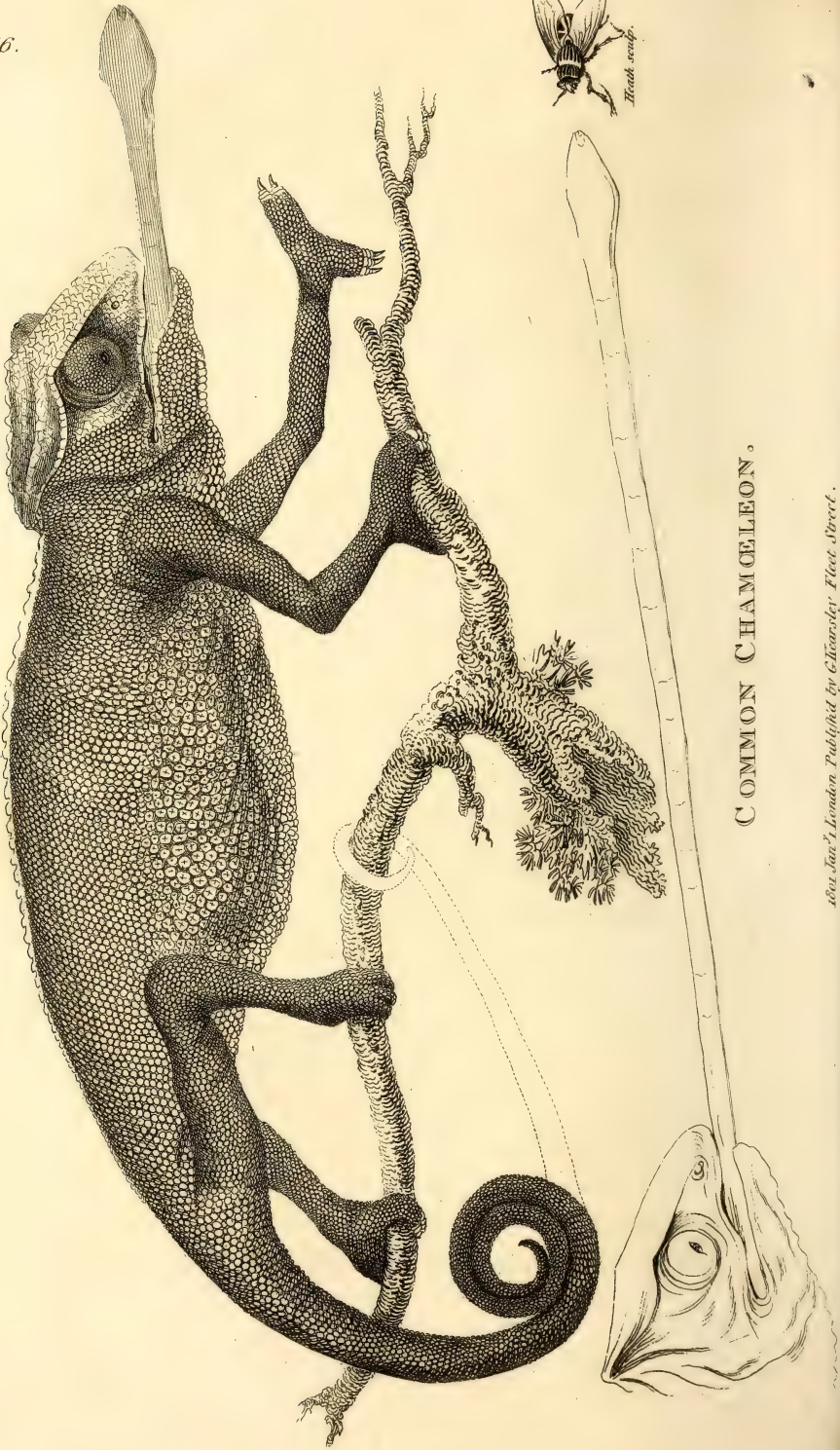
NATIVE of the desert of *Ural*: length about four inches: head roundish: colour of the upper parts livid brown, and covered with a wrinkled and slightly tuberculated skin: under parts whitish: moves with great swiftness.

SEPS LIZARD.

Lacerta Seps. L. cauda verticillata longiore, sutura laterali reflexa, squamis quadratis. Lin. Syst. Nat. p. 363.

Blueish-brown Lizard, with longish verticillated tail, reflexed lateral suture, and square scales.

THE Seps is rather a small species, and is easily distinguished by the thin and lengthened form of its body, long, slender tail, small, short limbs, slender toes, and particularly by the square scales with which it is entirely covered both above and below, and which are so disposed as to mark the animal into a great number of longitudinal and transverse divisions: the abdomen is divided as it were from the sides, by a very strongly-marked suture, continued from the head to the base of the



COMMON CHAMELEON.

tail; the sides rising up a little beyond the furrow: beneath the thighs is a row of papillæ: all the feet are furnished with five slender toes, and the tail is marked into about fifty verticilli or divisions. This lizard is a native of the southern parts of Europe, and though remotely different as a species, seems by some authors to have been confounded with the *Lacerta Chalcides*, the name *Seps* having been applied occasionally to both animals. In the British and Leverian Museums are specimens agreeing in every particular with the Linnæan description of the species. Its colour is a livid brown above, paler or more inclining to whiteness beneath.

*Chamæleons, with granulated skin, missile
tongue, &c.*

COMMON CHAMÆLEON.

Lacerta Chamæleon. L. cinerea, pileo plano, cauda tereti incurva, digitis duobis tribusque coadunatis.

Grey Chameleon, with flat crown, cylindric incurved tail, and toes conjoined by two and three.

L. Chamæleon. L. cauda tereti brevi incurva, digitis duobus tribusque coadunatis. Lin. Syst. Nat. p. 364.

L. cinerea, pileo plano. Lin. Syst. Nat. Gmel. p. 1069.

Chamæleon. *Aldr. Quad. Ovip. p. 670. Jonst. Quadr. t. 79.*

The Chameleon. *Museum Leverianum, 1. p. 194.*

L. Chamæleon. Chameleon. Millar. Cim. Phys. p. 22. t. 11.

FEW animals have been more celebrated by natural historians than the Chameleon, which has

been sometimes said to possess the power of changing its colour at pleasure, and of assimilating it to that of any particular object or situation. This, however, must be received with very great limitations; the change of colour which the animal exhibits varying in degree, according to circumstances of health, temperature of the weather, and many other causes, and consisting chiefly in a sort of alteration of shades from the natural greenish or blueish grey of the skin into pale yellowish, with irregular spots or patches of dull red; but not justifying the application of the Ovidian distich.

“ Non mihi tot cultus numero comprehendere fas est :
Adjicit ornatus proxima quæque dies.”

No numbers can the varying robe express,
While each new day presents a different dress.

It is also to be observed, that the natural or usual colour of Chameleons varies very considerably; some being much darker than others, and it has even been seen approaching to a blackish tinge. An occasional change of colour is likewise observable, though in a less striking degree, in some other Lizards.

The general length of the Chameleon, from the tip of the nose to the beginning of the tail, is about ten inches, and the tail is of nearly similar length, but the animal is found of various sizes, and sometimes exceeds the length above mentioned. It is a creature of a harmless nature, and supports itself by feeding on insects; for which

purpose the structure of the tongue is finely adapted, consisting of a long, missile body, furnished with a dilated and somewhat tubular tip, by means of which the animal seizes insects with great ease, darting out its tongue in the manner of a Woodpecker, and retracting it instantaneously with the prey secured in its tip. It can also support a long abstinence, and hence arose the popular idea of the Chameleon being nourished by air alone. It is found in many parts of the world, and particularly in India and Africa. It is also sometimes seen in the warmer parts of Spain and Portugal.

The Chameleon, by the power which it possesses in common with most other Amphibia, of inflating its lungs and retaining the air for a great length of time, appears occasionally of a plump or fleshy aspect, while at other times, on evacuating the air from its lungs and keeping them in a collapsed state, it appears in the utmost degree of extenuation as if consisting of little more than a mere skin, the ribs being completely visible on each side the body. The skin on every part of the animal is of a granulated structure, the granules differing in size on different parts, from that of a small pin's head to the diameter of the tenth of an inch, or even more, especially on the edges of the projecting parts of the head and jaws. Down the back runs a series of obscure denticulations or slight projections, forming a carina on that part. The feet consist each of five toes, three and two of which on each foot are connate, or

united as far as the claws by a common skin: on the fore feet the two outward and three inward toes are united; and in the hind feet the two inward and three outward. The motions of the Chameleon are extremely slow, and in sitting on a branch, or in passing from one to another, it fastens itself by coiling its tail round that from which it means to pass, till it has perfectly secured the other with its feet.

The general or usual changes of colour in the Chameleon, so far as I have been able to ascertain from my own observation of such as have been brought into this country in a living state, are from a blueish ash-colour (its natural tinge) to a green and sometimes yellowish colour, spotted unequally with red. If the animal be exposed to a full sunshine, the unilluminated side generally appears, within the space of some minutes, of a pale yellow, with large roundish patches or spots of red-brown. On reversing the situation of the animal the same change takes place in an opposite direction; the side which was before in the shade now becoming either brown or ash-colour, while the other side becomes yellow and red; but these changes are subject to much variety both as to intensity of colours and disposition of spots.

The following is the description given by the anatomists of the French Academy:

“The colour of all the eminences of our Chameleon when it was at rest, in the shade, and had continued a long time undisturbed, was a blueish grey, except under the feet, where it was white

inclining to yellow, and the intervals of the granules of the skin were of a pale and yellowish red. This grey, which coloured all the parts exposed to the light, changed when in the sun; and all the places of its body which were illuminated, instead of their blueish colour, became of a brownish grey, inclining to a *minime*. The rest of the skin, which was not illuminated by the sun, changed its grey into several brisk and shining colours, forming spots about half a finger's breadth, reaching from the crest of the spine to the middle of the back: others appeared on the ribs, fore legs, and tail. All these spots were of an Isabella colour, through the mixture of a pale yellow with which the granules were tinged, and of a bright red, which is the colour of the bottom of the skin which is visible between the granules: the rest of the skin not enlightened by the sun, and which was of a paler grey than ordinary, resembled a cloth made of mixed wool; some of the granules being greenish, others of a minime-grey, and others of the usual blueish grey, the ground remaining as before. When the sun did not shine, the first grey appeared again by little and little, and spread itself all over the body, except under the feet, which continued of the same colour, but a little browner; and when, being in this state, some of the company handled it, there immediately appeared on its shoulders and fore legs several very blackish spots about the size of a finger nail, and which did not take place when it was handled by those who usually took care of it. Sometimes it was

marked with brown spots, which inclined towards green. We afterwards wrapped it up in a linen cloth, where having been two or three minutes, we took it out whitish; but not so white as that of which Aldrovandus speaks, which was not to be distinguished from the linen on which it was laid. Ours, which had only changed its ordinary grey into a very pale one, after having kept this colour some time, lost it insensibly. This experiment made us question the truth of the Chameleon's taking all colours but white; as Theophrastus and Plutarch report; for ours seemed to have such a disposition to retain this colour, that it grew pale every night; and when dead, it had more white than any other colour: nor did we find that it changed colour all over the body, as Aristotle reports; for when it takes other colours than grey, and disguises itself, to appear in masquerade, as Ælian pleasantly says, it covers only certain parts of the body with them. Lastly, to conclude the experiments relative to the colours which the Chameleon can take, it was laid on substances of various colours, and wrapped up therein; but it took not them as it had done the white; and it took that only the first time the experiment was made, though it was repeated several times on different days."

"In making these experiments we observed that there were a great many places of its skin which grew brown, but very little at a time: to be certain of which we marked with small specks of ink those granules which to us appeared whitest in its

pale state ; and we always found that when it grew brownest, and its skin spotted, those grains which we had marked, were always less brown than the rest."

The anatomy of the Chameleon has been well detailed by the above-mentioned Academicians. The principal abridged particulars are as follow :

The *Mouth* is wide and the bones of the jaws denticulated, so as to represent small teeth.

The *Tongue* is of a very extraordinary form ; being composed of a white solid flesh, about ten lines long, and three broad, round, a little flattish towards the end, hollow, and open, somewhat like the end of an elephant's proboscis. This tongue is fastened to the *os hyoides* by means of a sort of trunk, shaped like an intestine, six inches long, and a line broad, having a membrane without, and a nervous substance within, which is solid and compact, though soft, and not easily divisible into fibres : this trunk serves to cast out the tongue, which is fastened to it, by extending it, and to draw it back by contracting it, which motion it is enabled to perform by a kind of cartilaginous *stylus* to which its investing membrane is attached, and over which it is plaited like a silk stocking on the leg : this *stylus* is an inch long, and takes its origin from the middle of the base of the *os hyoides*, as in the tongue of several birds : a number of blood-vessels are distributed on the tongue.

The form, structure, and motion of the *Eyes* is very peculiar : they are very large, viz. above five lines in diameter ; appearing spherical, projecting

in the living animal full half of their diameter : they are covered with one single eyelid or skin, pierced in the middle with a small hole of not more than a line in diameter, through which the pupil appears, surrounded by a gold-coloured iris : the eyelid, or investing skin, is granulated like the rest of the animal : the fore part of the eye is fastened to the lid, so that the lid follows all the motions of the eye : sometimes one of the eyes will move while the other is at rest, or turn forwards while the other is directed backwards, or upwards, while the other is turned downwards : by extending the skin of the orifice crossways the Chameleon can close its eyes, the hole then becoming a longitudinal rimma or slit : the optic nerves are eight lines in length : the cornea is small ; the sclerotica hard and thick ; but the hinder part very thin : the choroides black under the iris, and blueish at the bottom : the retina very thick, and reddish : the humors all aqueous, the chrystalline itself scarce distinct from the rest.

The *Brain* is extremely small, scarce more than a line in diameter, and not twice the thickness of the spinal marrow, which is very white, the brain itself being grey.

The *Heart* is very small, not exceeding three lines in length ; its point appearing truncated or as if cut off : the auricles very large, especially the left, and somewhat redder than the heart.

The *Lungs* very large when inflated ; and divided into several processes or saccular subdivisions ; but when collapsed they appear small.

The *Stomach* long and narrow; the intestines large.

The *Liver* of a pretty firm substance, and of a dark red colour.

In the stomach (as may be supposed) were the remains of insects.

This Chameleon, during the time it lived, occasionally evacuated from its intestines certain small stony concretions of about the size of a pea, of an apparently calcareous substance, and readily dissolving in vinegar: one of them was found to contain in its middle the head of a fly; so that they must necessarily have been formed in the stomach or intestines of the animal*.

The spine of the Chameleon, comprehending the tail, consists of seventy-four vertebræ, and the ribs are eighteen on each side.

The popular error of the Chameleon living on air alone, must have originated from the long abstinence which the animal can occasionally support; instances having occurred of its passing several months without any apparent nourishment.

Sir Thomas Browne, in a long and learned chapter on this subject in his *Vulgar Errors*, expresses himself in the following terms:

“All which considered, severer heads will be apt enough to conceive the vulgar opinion of this animal, to be not much unlike that of the *Astomi*,

* A kind of Bezoar is occasionally found in the stomach of the common Guana; instances of which may be found in the work of Seba.

or Men without mouths, in *Pliny*; suitable unto the relation of the Mares in Spain, and their sub-ventaneous conceptions from the western wind; and in some way more unreasonable than the figment of *Rabican*, the famous horse in *Ariosto*, which being conceived by flame and wind, never tasted grass, or fed on any grosser provender than air; for this way of nutrition was answerable unto the principles of his generation; which being not airy but gross and seminal in the *Chamæleon*, unto its conservation there is required a solid pasture, and a food congenerous unto the principles of its nature."

Besides the Common Chameleon, different races appear to exist, which are principally distinguished by their colour, and the more or less elevated state of the angular or crested part of the head. These, which Linnæus was content to consider as varieties, are now raised to the dignity of species, and are thus distinguished in the Gmelinian edition of the *Systema Naturæ*.

AFRICAN CHAMELEON.

Lacerta Africana. L. nigra pileo carinato. Lin. Syst. Nat. Gmel. p. 1069.

Blackish Chameleon, with carinated crown.

Chamæleo ex Africa colore nigricante, at pectine albo supra dorsum decoratus. Seb. Mus. 1. p. 134. t. 83. f. 4.

THIS, says Seba, came from the coasts of Barbary, and is one of the largest yet known: along

the back, to the end of the tail, runs a pure white stripe, bounded by a broad blackish band : the rest of the animal is variegated with pale cinereous undulations. In the specific character, as given by Dr. Gmelin, the word *nigricans* should be substituted for *nigra*, since the stripes alone on the top of the back are of a black colour, as is evident from the description and figure of Seba.

LITTLE CHAMELEON.

Lacerta Pumila. *L. corpore lateribus cærulescente, lineis binis flavescentibus.* *Lin. Syst. Nat. Gmel. p. 1069.*

Chameleon with the body blueish on each side, marked with two yellowish lines.

Chamæleo promontorii Bonæ Spei, cæruleo alboque colore marmoris instar variegatus. *Seb. Mus. 1. p. 135. t. 83. f. 5.*

THIS, according to Seba's description and figure, has the head somewhat flatter than the former, though still elevated towards the middle part : it is also edged on each side by a denticulated margin. The body is of a blueish colour, marbled or variegated with white. It may well be doubted, however, whether either this or the former can properly be considered as in any other light than varieties of the common or first described species.

Geckos, with granulated or tuberculated skin, lobated feet, and toes lamellated beneath.

COMMON GECKO.

Lacerta Gecko. *L. livida fusco variegata, corpore verrucoso, pedum lamellis indivisis.*

Livid Gecko, with brown variegations, body warted above, and the lamellæ of the feet undivided.

Lacerta Gecko. *L. cauda tereti mediocri, digitis muticis subtus lamellatis, corpore verrucoso, auribus concavis.* Lin. Syst. Nat. p. 365.

Salamandra vera seu Gekko Ceilonicus. Seb. 1. p. 170. t. 108.

THE Gecko, said to be so named from the sound of its voice, which resembles the above word uttered in a shrill tone, is a native of many parts of Asia and Africa, as well as of some of the warmer regions of Europe. It is one of the middle-sized Lizards, measuring, in general, about a foot in length, or rather more. It is of a thicker and stouter form than most other Lizards, having a large and somewhat triangular flattish head, covered with small scales, a wide mouth, large eyes, minute teeth, and a broad flat tongue. The limbs are of moderate length, and the feet are of a broader form than in the rest of the genus *Lacerta*, each toe being dilated on the margins, and divided beneath into a great number of parallel transverse lamellæ, without any longitudinal mark or furrow: all the toes, except the thumbs, are furnished with small claws: the tail, which is generally longer than the body, is marked, more or less

COMMON GECKO.



From nature.

distinctly, according to the age of the animal, into divisions or verticillated rings: the whole animal is covered on the upper parts with numerous, distant, round warts or prominences, approaching more or less to an acute form in different individuals, and sometimes obtuse: beneath each thigh is a row of perforated papillæ, as in the Green Lizard and many others: the under parts of the body are covered with scales of somewhat dissimilar appearance, but all approaching to a round figure.

The Gecko inhabits obscure recesses, caverns, old walls, trees, &c. &c. and wanders about chiefly on the approach of rain. It is considered as of a poisonous nature, a highly acrimonious kind of fluid exsuding from the lamellæ of the feet, which remaining on the surface of fruit or any other edible substance is often productive of troublesome symptoms to those who happen to swallow it. From the peculiar structure of its feet, the Gecko can readily adhere to the smoothest surfaces. The general colour of the animal is pale brown, with a few irregular dusky or blueish variegations, but in those which inhabit the warmer regions of the globe this colour seems to be exalted into a much more brilliant appearance.

Var. ?

TOKAI.

THIS kind is described by the Jesuit Missionaries from Lewis the fourteenth to Siam. Its

length is about a foot: the body is covered above by a granulated skin, varied with red and blue undulations: the back is roughened by a great many longitudinal rows of pale blue conical protuberances: the belly is cinereous, scattered over with red spots: the head large and triangular: the eyes very large: tongue flat: feet divided into lamellæ beneath; by the help of which the animal adheres to the smoothest surfaces, as if agglutinated to them. It occasionally enters the houses of the Siamese; is considered by them as a poisonous animal, and is called by the title of *Tokai*.

Bontius, in his history of Java, appears to describe a similar kind, under the name of the Indian Salamander. It is called *Gecco* by the Javanese, on account of its shrill cry. Its length is about a foot, and its colour sea-green, spotted with red: the head large and toad-like; the eyes large and extremely protuberant: the body broad, and the tail long. The Javanese are said to hold up the animal by the tail, in order to make it discharge its foam or sanies from its mouth, which they collect in order to poison their arrows with.

GECKOTTE.

Lacerta Dubia. *L. livida supra aculeato- verrucosa, papillis femoralibus nullis.*

Livid Gecko, with pointed warts on its upper surface, and no femoral papillæ.

Le Geckotte. *Cepede ovip. p. 420.*

THIS is described by the Count de Cepede, who informs us that it is so nearly allied to the Gecko, that, without an attentive survey, it might be easily confounded with it: it is distinguished, however, by its somewhat thicker or shorter form, both in body, limbs, and tail, as well as by the defect of subfemoral papillæ: the upper parts are tuberculated, as in the former species, the tubercles appearing most pointed about the neck, sides, and tail, which latter, in the young animal, is divided into strongly-marked aculeated verticilli, owing to the scales with which it is at that time covered; but, as the animal advances in age, the verticilli become gradually less conspicuous, and are at length entirely obliterated, so that the part appears smooth, as well as much shorter than in its younger state.

This species is found in the south of France, where it is called *Tarente*: it inhabits ruins, walls, houses, &c. delighting much in sunshine, and being never found in damp shady situations. In winter it lies concealed in the hollows of walls, beneath tiles, &c. where it remains in an inert, but not a torpid state. It is regarded as innocent,

and has no particular voice or cry. The Count de Cepede appears to suppose it the *L. Mauritanica* of Linnæus, but Mr. Schneider assures us, that this is a mistake.

PERFOLIATED GECKO.

Lacerta Perfoliata. *L. subfusca supra læviuscula, lamellis pedum sulco divisis, cauda (scæpius) subturbinata.*

Brownish Gecko, nearly smooth above, with the lamellæ of the feet divided by a furrow, and tail (frequently) turbinated.

Stellio perfoliatus. *Schneid. Amph. Phys. Spec. Alt. p. 26.*

THIS species also is so extremely nearly allied to the common Gecko, that it might pass for the same animal, except that it is of a somewhat thicker form, with shorter limbs, and is less distinctly marked by tubercles on the back, which is rather covered by small conical scales or granules: it is also destitute of subfemoral papillæ: the lamellæ of the feet are divided by a midrib, or longitudinal furrow, and the claws are sheathed or retractile: the tail is of similar form to that of the common Gecko, but appears to be liable to a singular variation, in which it is remarkably swelled immediately beyond its origin, and gradually tapers again to the extremity, so as to resemble the form of a young turnep root; being shorter than the body itself: this variation, if such it be, has been considered by some authors as a distinctive character, and the animal has been accordingly named *Lacerta rapicauda*, under which

title it stands in the Gmelinian edition of the *Systema Naturæ*. A specimen of similar character is preserved in the British Museum, as well as in the Leverian, and from the general tenor of the descriptions given by authors, it appears to be more frequently seen in this state than in what Mr. Schneider considers as its truly natural one. Mr. S. names it the Perfoliated Gecko, from the appearance of the under surface of the feet, the lamellæ of which, being traversed by a longitudinal midrib, represent in some degree the structure of the leaves in a perfoliate plant. The colour of this species is cinereous, clouded or marbled with brown variegations. Upon the whole, I cannot help suspecting, that this is, in reality, the same animal with the preceding, or Geckotte.

 MAURITANIC GECKO.

Lacerta Mauritanica. *L. tota supra mucronato-verrucosa, cauda planiuscula subtus scutis tecta, pedum lamellis divisis lunulatis.*

Brown Gecko, entirely covered above with sharp warts, with the tail nearly flat and furnished with scuta beneath, and with the lamellæ of the feet lunulated and divided.

Stellio Mauritanicus. *Schneid. Phys. Amph. Sp. Alt. p. 24.*

Salamandra Ceylonica. *Seb. 1. p. 170. t. 108. f. 4, 5, 6, 7.?*

Lacerta Mauritanica. *L. cauda subverticillata brevi muricata apice lævi, corpore supra muricato, digitis subtus lamellatis muricatis.* *Lin. Syst. Nat. p. 361.*

THE Mauritanic Gecko is of similar aspect to the first or common species, but is covered with

spiny or sharp-pointed warts on its upper surface: the tail also is distinctly verticillated by rows of spiny processes: the toes are lamellated beneath, but not divided by a middle sulcus, and are furnished with small claws: beneath the thighs is a short row of papillæ: the tail is flattish beneath, and covered with broad transverse scales, and the principal or most strongly-marked joints or verticilli are the six superior ones. Mr. Schneider, who seems to be never weary of censuring the Count de Cepede, complains that that gentleman has erred in comparing this with a very different species, and that he never could have seen the animal.

CHINESE GECKO.

Lacerta Sinensis. L. cauda ancipite, digitis omnibus unguiculatis, facie foraminibus pluribus pertusa. Schneid. Amph. Phys. Sp. Alt. p. 28.

Gecko with flat tail, all the toes unguiculated, and the face perforated by several pores.

THIS was first described by Osbeck, who observed it in China, where it is frequently seen in houses, running about the walls, and climbing with extreme readiness on the smoothest surfaces, preying chiefly on the smaller kind of Blattæ. The head is broad and flat; the teeth small; the tongue flat and emarginated at the tip: the body flat, broad, and compressed at the sides: the back beset with black and whitish tubercles: the tail

rather longer than the body, and flat or ancipital*: the toes lamellated beneath, and all furnished with claws: the colour of the upper parts is cinereous; the abdomen white; and the tail variegated by ten or eleven blackish clouds or bars: about the sides of the nose and eyes are several scattered pores. This species is considered as perfectly innoxious. It appears to be omitted in the Gmelinian edition of the *Systema Naturæ*.

WHITE-STRIPED GECKO.

Lacerta Vittata. L. fusco-flavescens, fascia dorsali alba super caput furcata.

Yellowish-brown Gecko, with a white dorsal band forked over the head.

L. vittata. L. cauda tereti longa, dorsi vitta alba dichotoma. Lin. Syst. Nat. Gmel. p. 1067. Houttuyn. Act. Uliss. 9. p. 325. t. 2.

Stellio bifurcifer. Schneid Amph. Phys. Spec. Alt. p. 21.

THE White-striped Gecko is one of the smaller species, measuring about seven or eight inches in length, and is of a somewhat more slender form than the rest: the head is large in proportion to the body; the limbs of moderate length; and the tail, which is slightly verticillated towards the base, is rather slender, and scarcely equal to the body in length: the toes are lamellated beneath, marked by a sulcus or middle division, and ter-

* It is not clear, from Osbeck's description, whether the tail be vertically or laterally compressed.

minated by curved claws. This species is readily distinguished from all others yet discovered by its colour, being of a yellowish brown, marked on the back, from head to tail, by a very distinct white band, which on the head divides into a forked appearance, and at the commencement of the tail into two short rounded tips: the slender part of the tail, commencing beyond the three first rings, is of the same pale or white colour, marked longitudinally with several short, brown, scattered streaks. The whole upper surface of the animal is beset with extremely small tubercles, so minute as not to be perceived without a close inspection. It is said to be a native of India.

FIMBRIATED GECKO.

Lacerta Fimbriata. L. corpore utrinque margine membranaceo fimbriato, cauda plana, pedum lamellis sulco divisis.

Gecko with membranaceous fimbriated border on each side of the body, flat tail, and lamellæ of the feet divided by a furrow.

Stellio fimbriatus. Schneid. Amph. Phys. Sp. Alt. p. 32.

La Tete-Plate. Cope de Ovip. p. 425. pl. 30.

THIS remarkable species seems to have been first described by the Count de Cope, who informs us that it appears in some degree to connect the Chameleon, the Gecko, and the Water Newts; the head, skin, and general form of the body resembling those of the Chameleon, the tail that of the Water Newts, being of a compressed form, though in a different manner (not vertically but

horizontally flattened), while the feet resemble those of the Gecko. The largest specimen examined by the Count de Cepede measured about eight inches and six lines in length, of which the tail measured two inches and four lines. The head is very large, and much flattened: the eyes large; the opening of the mouth wide; the teeth very small and numerous, and the tongue broad, divided, and resembling that of the Gecko: the lower jaw is so thin or flat, that one would at first imagine the lower part of the head to be wanting: the outline of the whole head, viewed from above, is almost triangular, as in the Chameleon; but the triangle is of a much longer form, and without any rising casque or crest as in that animal: the body is about twice the length of the head, and is bordered by a membrane or prolongation of the skin, which, commencing on each side the head, is continued along those of the body, forming a kind of fringed or fimbriated process, which also passes down each leg, separating the upper surface from the lower: the tail, which, as before observed, is much shorter than the body, is so formed as to resemble, in some degree, the shape of an oar; being expanded into a wide membranaceous part on each side, the true tail, or middle part, being taper and small: the legs are rather short: the feet divided into five toes, connected at their origin by the skin of the legs, but much divided and expanded at their tips, and are all furnished beneath with a number of transverse lamellæ, as in the rest of the Gecko tribe: the skin on all parts resembles

that of the Chameleon, being covered with small protuberances, so as to give it a somewhat chagrin-like appearance. The colour of this animal is not constant or permanent, as in most lizards, but variable, as in the Chameleon, presenting successively different shades of red, yellow, green, and blue. This variation of colour is, however, confined to the upper surface of the animal; the lower always continuing of a bright yellow. These changes, we are informed, have been observed in the living animal by Mons. Bruyeres in its native country, viz. Madagascar, where it is not very uncommon, and where, though a harmless animal, it is held in great abhorrence by the natives, who consider it as of a poisonous nature, and fly from it with precipitation; pretending that it darts on their breast, and adheres with such force by its fringed membrane that it cannot be separated from the skin without the assistance of a razor. The principal cause of this popular dread of the animal, is its habit of running open-mouthed towards the spectator, instead of attempting to escape when discovered. Its chief residence is on the branches of trees, where it lives on insects, holding itself secure by coiling its tail, short as it is, half round the twig on which it sits. It chiefly appears in rainy weather, when it moves with considerable agility, often springing from bough to bough. On the ground it walks but slowly, the fore legs being shorter than the hinder.

FOUR-TOED GECKO.

Lacerta tetradactyla. L. lutea viridi variegata, pedibus tetradactylis, cauda plana.

Yellow Gecko, varied with green, with tetradactyle feet, and flat tail.

Stellio tetradactylus. Schneid. Amph. Phys. Sp. Alt. p. 33.

Le Sarroube. *Cepede ovip. p. 493.*

THIS was first described by the Count de Cepede, from an account communicated by Mons. Bruyeres. It is very nearly allied to the Fimbriated Gecko, but differs in wanting the fimbriated margin, and in the number of toes on the fore feet, which are only four. Its length is about twelve inches: the head flat and oblong: the eyes large, with the pupils vertical: the neck long, and covered above with a double row of yellow scales; the back with a granulated yellow skin, marked with green spots or variegations: the abdomen is covered with yellow scales: in the form of the feet and tail it agrees with the preceding, except, as before observed, in having only four toes on the fore feet, for which reason the Count de Cepede has stationed it among the Salamanders. It is a native of Madagascar, where it is held in equal detestation with the former species. Its native name is *Sarrube*. It inhabits woods, and appears chiefly during the rainy season, and by night.

SCOLLOP-TAILED GECKO.

Lacerta Caudiverbera. L. cauda depresso-plana pinnatifida, pedibus palmatis. Lin. Syst. Nat. p. 359.

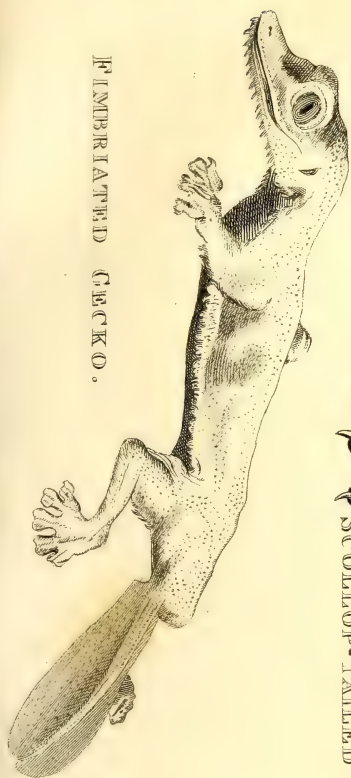
Gecko with flat pinnatifid tail and palmated feet.

Salamandra aquatica ex Arabia. Seb. 2. p. 109. t. 103. f. 2.

THIS curious species is described by Seba, who represents it as a native of Arabia. Its total length is about sixteen inches, of which the tail measures something more than half. The head is large and flattish, the mouth wide, the tongue broad, the teeth small and numerous, the neck short, the throat protuberant, the body thick, and the limbs rather short than long: the fore feet are apparently formed like those of the rest of the Gecko tribe: the hind feet are of a similar form, but strongly palmated: the tail tapers gradually to the tip, but is edged throughout its whole length with a broad and deeply-scolloped fin or membrane, which gradually widens as it approaches the tip, where it is considerably broader than on the sides. The whole animal is covered, except on the head, with a smooth* skin of a yellow colour; the back being marked by numerous, distant, red tubercles or granules, each surrounded by a circle of small white scales: the thighs and middle part of the tail are also spotted with similar red tubercles, but not surrounded by white scales like those on the

* By this Seba may perhaps mean a finely-scaled skin rather than a naked one.

FIMBRIATED GECKO.



SCOLLUP-TAILED GECKO.



Foot of Fimbriated Gecko.



back : the webs of the hind feet and the scolloped or finny part of the tail are of a bright red : all the toes are furnished with claws. It is an extremely rare animal, and its full history does not appear to be clearly understood.

VAR. ?

Caudiverbera Peruviana. *Laur. Amph. p. 34. Feuillée Per. 2. p. 319.*

FEUILLÉE, in his account of Peru, describes a species in many respects allied to the above, but of a blueish black colour.

Mr. Schneider, who ranks the *L. Caudiverbera* among the rest of the Geckos, observes, that there is some confusion in the Count de Cépède's work relative to this species and the American Crocodile of Seba. "Gallus De la Cépède omnem animalis notitiam, appositis licet locis civis sui Feuillée et Laurenti, plane pervertit. Scilicet is nescio quo glaucomate oculis subito oborto in *Systemate Linnæi Sebanii Thesauri* tomum 1. ejusque tabulam 103. fig. 2. laudatum legere sibi visus est cum Linnæus laudasset eandem tabulam ex tomo altero. Picturam igitur Sebanam, quam tamen ipse suo errore retulerat ad lacertam caudiverberam, improbavit, et recte quidem, eique alteram ejusdem tomi in tab. 106. fig. 1. substituit, quæ *Crocodilum Americanum* plane expressit, atque ad ejus notitiam recte fuit relata a Laurentio. Cui errori sane gravissimo similes plures reperi in libro

Galli, quos tempore opportuniore alibi coarguam.”
—*Schneid. Amph.*

SCHNEIDERIAN GECKO.

Lacerta Schneideriana. L. cinerea, cauda supra convexa infra plana, fascia utrinque capitis nigra, pedum lamellis lunulatis divisis.

Grey Gecko, with tail convex above and flat below, a black band on each side the head, and the lamellæ of the feet lunulated and divided.

Stellio platyurus. Schneid. Amph. Sp. Alt. p. 30.

SLIGHTLY described by Mr. Schneider, who considers it as a species before unnoticed: size not mentioned: colour cinereous, with a brown band on each side the head, running across the eyes over the shoulders: along each side of the body a kind of suture or wrinkling of the skin: tail broad, convex above, flat below, and edged with a row of longer and sharper scales than on the other parts.

SPARMANN'S GECKO.

Lacerta Sparmanniana. *L. corpore supra papilloso, cauda lanceolata mediocri, palmis tetradactylis.*

Gecko with the body papillated above, lanceolate tail of moderate length, and tetradactyle fore feet.

Lacerta Geitje. *Lin. Syst. Nat. Gmel. p. 1068.*

Sparmann Act. Gothenb. 1. p. 75. t. 5. f. 1.

THIS small species, which does not exceed three inches in total length, is found at the Cape of Good Hope, where it is considered as a poisonous animal, the saliva, secreted moisture from its pores, &c. being said to produce tumours and even gangrenes, which are sometimes cured by the application of citron juice, but if too much neglected, are productive of very dangerous symptoms. It seems to have been first described by Sparmann. Its colour on the upper parts is a variegation of darker and lighter shades, and on the under parts whitish.

SPITTING GECKO.

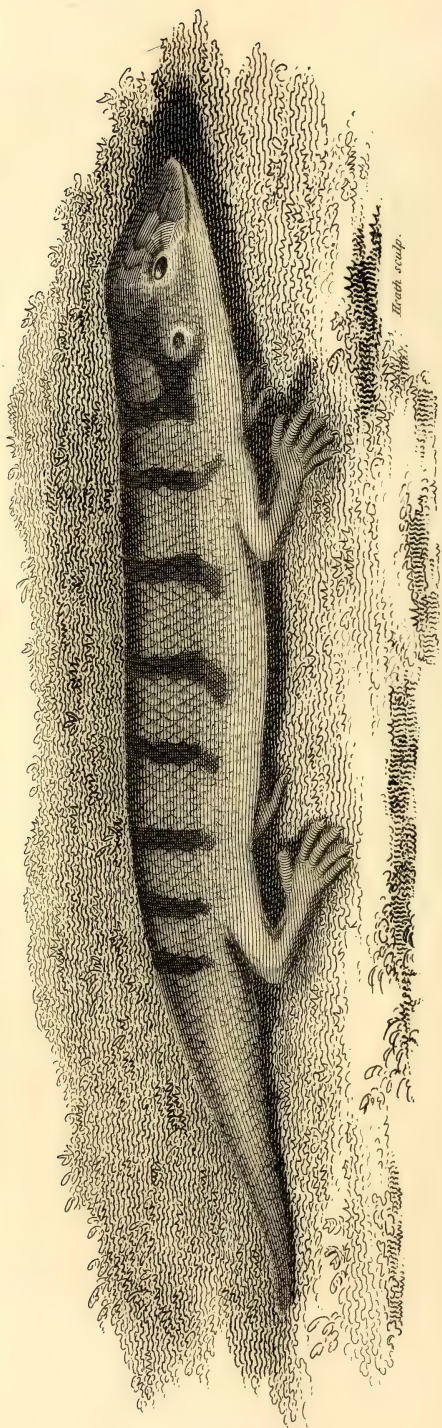
Lacerta Sputator. *L. cinerea, supra fasciis transversis fuscis, cauda tereti subtus scutata.*

Grey Gecko, marked above with brown transverse bands, with round tail scutated beneath.

Lacerta Sputator. *Sparm. Nov. Act. Stockh. 5. n. 9. t. 4. f. 1—3.*

THIS also is a small species, scarce exceeding four inches in total length, and being often found

much smaller : the tail is but little longer than the body : the colour of the upper parts pale cinereous, with several bands or transverse patches of brown, which gradually vanish towards the tip of the tail : the limbs are banded in the same manner : the under parts are pale cinereous or whitish : the tongue oblong, flattish, rounded, and slightly divided at the tip : the feet are divided into five toes, without claws, and terminated by a kind of dilated tips : the scales on the whole animal are smooth or glossy ; the tail round and taper, and furnished beneath with a row of small scuta. This species is a native of the island of Eustatia, and occasionally strays into houses, and about woodwork, walls, &c. When disturbed by a near approach, it is said to ejaculate from its mouth a black acrimonious fluid into the face of the spectator ; thus causing a slight inflammation of the skin, which is commonly dispersed by rubbing the part with camphorated spirit of wine. The exact structure of the lower surface of the feet in this species is not distinctly described, but there is reason to suppose that it belongs to the Gecko tribe.



OFFICIAL SCINK.

Scinks, with round fish-like scales.

OFFICINAL SCINK.

Lacerta Scincus. *L. fusco-flavescens, supra fasciis transversis fuscis, cauda brevi apice compressa, maxilla superiore longiore.*

Yellowish-brown Lizard, with transverse brown bands on the upper part, short tail with compressed tip, and upper jaw longer than the lower.

Lacerta Scincus. *L. cauda tereti mediocri apice compressa, digitis muticis marginatis.* Lin. Syst. Nat. p. 365.

Scincus. Raj. Quadr. 271.

Scincus major. Besl. Fascic. Rarior. t. 2. f. 1.

The Common or Officinal Scink.

THE Scink is one of the middle-sized or smaller lizards, and is a native of many of the eastern parts of the world. It abounds in Lybia, Syria, Egypt, and Arabia, frequenting moderately dry and sandy soils, and growing to the length of six or seven inches, or even sometimes more. The head of the Scink is rather small than large, the body thick and round, and the tail in general considerably shorter than the body. The whole animal is of a pale yellowish brown colour, with a few broad, dusky, transverse undulations or zones, and is uniformly covered with moderately large or fish-like scales, lying extremely close and smooth, so that the surface has a glossy or oily appearance. It is an animal of harmless manners, and, like most other lizards, supports itself on the various insects which wander about the regions it inhabits.

This animal was once in high estimation as an article in the *Materia Medica*, and the flesh, particularly of the belly, was supposed to be diuretic, alexipharmic, restorative, and useful in leprous and many other cases; but whatever virtues it may possess when used fresh, it is not considered as of any importance when in its dried or imported state, and while it continued to be used in practice served only to increase the number of ingredients in that curious remnant of what Dr. Lewis happily terms the wild exuberance of medical superstition in former ages, the celebrated *Confectio Damocratis*, or Mithridate.

The Scink is described and figured by Mr. Bruce under the name of *El Adda*, and is said to be extremely common in the province of *Atbara*, in Abyssinia.

“ It burrows,” says this author, “ in the sand, and performs this operation so quickly, that it is out of sight in an instant, and appears rather to have found a hole than to have made one, yet it comes out often in the heat of the day, and basks itself in the sun; and if not very much frightened, will take refuge behind stones, or in the withered, ragged roots of the absinthium, dried in the sun to nearly its own colour. Its length is rather more than six inches: though its legs are long, it does not make use of them to stand upright, but creeps with its belly almost close to the ground. It runs, however, with very great celerity. It is very long from its shoulder to its nose, being nearly two inches: its body is round, having scarce any

flatness in its belly : its tail too is perfectly round, having no flatness in its lower part : it is exceedingly sharp-pointed, and very easily broke, yet I have seen several where the part broke off has been renewed, so as scarcely to be discernible : it is the same length between the point of the tail and the joint of the hinder leg, as was between the nose and the shoulder of the fore leg : its forehead, from the occiput, is flat, its shape conical, not pointed but rounded at the end, in the shape of some shovels or spades : the head is darker than the body ; the occiput darker still : its face is covered with fine black lines, which cross one another at right angles like a net : its eyes are small, defended with a number of strong black hairs or eye-lashes : its upper jaw is longer, and projects considerably over the under : both its jaws have a number of short, fine, but very feeble teeth, and, when holding it in my hand, though it struggled violently to get loose, it never attempted to make use of its teeth ; indeed it seems to turn its neck with great difficulty : its ears are large, open, and nearly round : its body is a light yellow, bordering on straw colour, crossed with eight bands of black, almost equally distant, except the two next the tail : all these decrease both in breadth and length from the middle towards each extremity of the animal : the scales are largest along the back ; they are very close, though the divisions are sufficiently apparent : their surface is very polished, and seems as if varnished over : its legs, from the shoulder to the middle toe, are nearly an

inch and three quarters long; its feet are composed of five toes, the extremity of each is armed with a brown claw of no great strength, whose end is tipped with black."

Mr. Bruce adds, that the El Adda is one of the few lizards which the Arabs in all times have believed to be free from poisonous qualities, and yet to have all the medical virtues they have so abundantly lavished upon the more noxious species: their character, however, as a medicine, seems to be greatly on the decline in their native regions, and though the books prescribing them are in every body's hands, yet the medicine is not now made use of in the places where the books were written, which affords a pretty strong proof that it was never very efficacious.

Mr. Bruce observes, that lizards in general are peculiarly numerous in the eastern regions. The desert parts of Syria, bordering on Arabia Deserta, abound with them beyond a possibility of counting them.

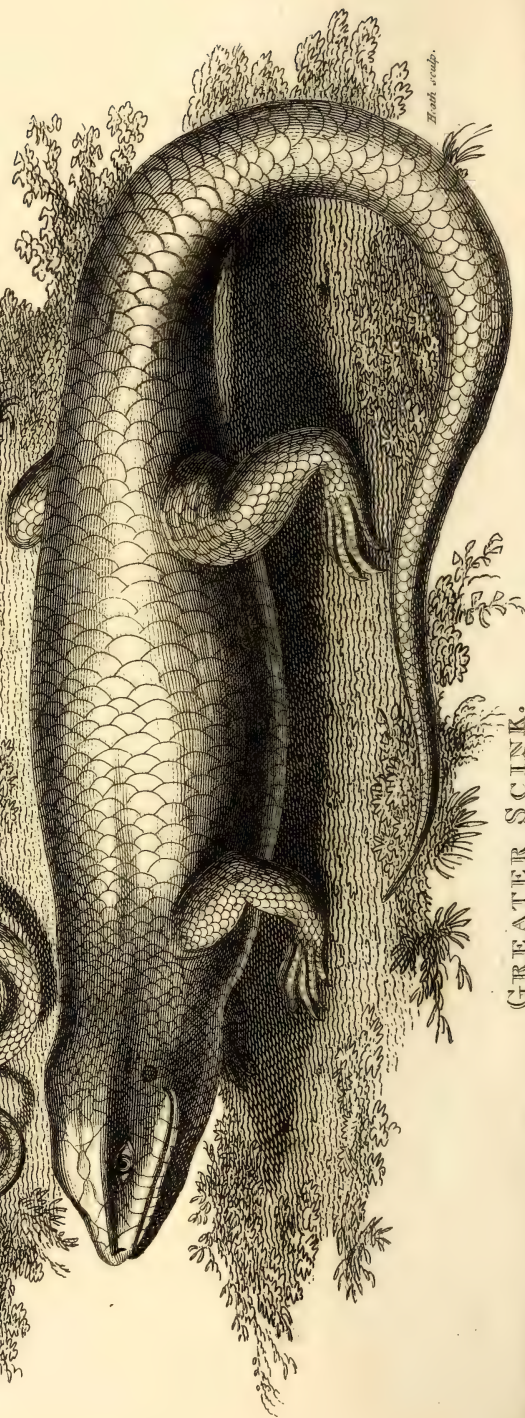
"I am positive," says Mr. Bruce, "that I can say, without exaggeration, that the number I saw one day, in the great court of the temple of the Sun at Balbec, amounted to many thousands: the ground, the walls, and stones of the ruined buildings, were covered with them, and the various colours of which they consisted made a very extraordinary appearance, glittering under the sun, in which they lay sleeping and basking."



LONG TAILED SCINK.



GREATER SCINK.

*Both sculp.*

GREATER SCINK.

Lacerta Rufescens. *L. rufo-flavescens, pedibus brevibus, cauda mediocri.*

Yellowish-rufous Lizard, with short feet, and tail of moderate length.

Lacertus Cyprius scincoides. *Aldr. ovip. p. 660.*

L. aurata.? *L. cauda tereti longiuscula, squamis rotundatis glabris, lateribus subfuscis.* *Lin. Syst. Nat. p. 568.*

Lacerta maritima maxima, seu Crocodilus ex Arabia. *Seb. 2. p. 112. t. 105. f. 3.*

THIS species much resembles the common or officinal Scink, but is considerably larger, measuring fifteen inches or more in length, from the nose to the end of the tail, which latter is longer in proportion than that of the Scink. The colour of the whole animal is a pale rufous brown, with a still paler stripe down the back, and along each side: the head is covered in front with large angular scales; the body, limbs, and tail, with rounded ones, which are more distinctly expressed, or not quite so glossy and closely pressed to the skin as in the true Scink: the legs are short and thick, the feet pentadactyle and furnished with small claws. It is, according to Seba, a native of Arabia and Egypt, living both in land and water, and often frequenting the shores of the Nile, &c. It seems also to be found in some of the European islands, and in particular in that of Cyprus, since the *Lacertus Cyprius Scincoides* of Aldrovandus appears to be the same animal: this latter is represented as of a deeper colour on the sides than on

the back, with a pale lateral line, and is commonly quoted as the *Lacerta aurata* of Linnæus, which that author describes as being of a beautiful gilded hue, while living, which is lost in the dead specimen. It is probably most remarkable in the young or half-grown animals, specimens sometimes occurring, of a small size, in which the gilded tinge of the scales, and brown lateral stripe, are very conspicuous.

LONG-TAILED SCINK.

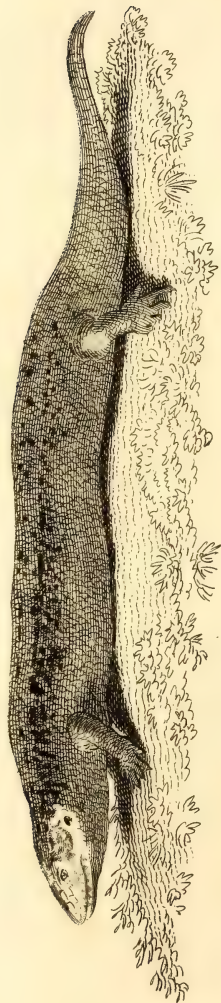
Lacerta longicauda. *L. olivacea-flavescens, cauda longissima.*

Olivaceous-yellow Lizard, with extremely long tail.

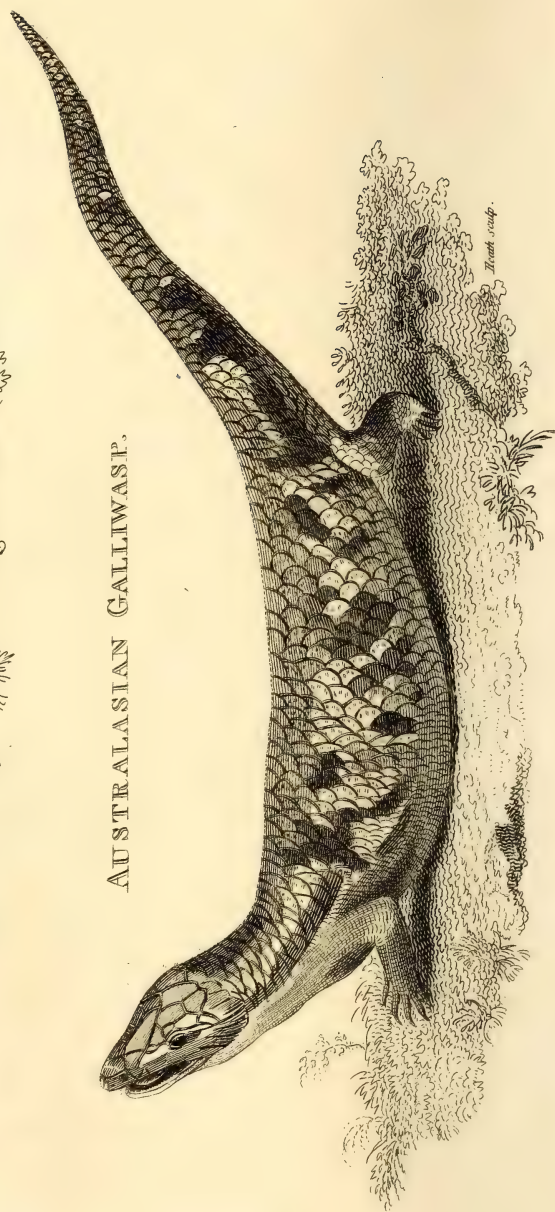
Scincus marinus Americanus longa cauda. *Seb. 2. p. 11. t. 10. f. 4.*

THIS is considered by Dr. Gmelin as a variety of the common Scink; yet it differs so much from that animal, by its great length of tail, that it is in all probability a very distinct species. It is, according to Seba, a native of America, and is said to frequent the sea coasts, and to feed on small crabs and spiders. Its colour is a greenish yellow, deeper or lighter in different individuals.

MABOYA SCINK.



AUSTRALASIAN GALLIWASP.



MABOUYA SCINK.

Lacerta Mabouya. *L. subaurato-flavescens, lateribus subfuscis, pedibus brevibus, maxillis æqualibus, cauda mediocri.*

Gilded-yellowish Lizard, with brownish sides, short legs, jaws of equal and tail of middling length.

Le Mabouya. *Cepede ovip. p. 378. pl. 34.*

THE Mabouya, according to the Count de Cepede, who has described and figured it in his History of Oviparous Quadrupeds, is extremely allied to the Scink, from which, indeed, on a cursory view, it scarce differs, except in having somewhat shorter legs in proportion, and jaws of equal length; whereas in the Scink the upper jaw is longer than the lower. The length of the individual described by the Count de Cepede was eight inches: the ground colour is a kind of gilded yellow*, but the scales on the back are sometimes much darker with a white speck or line on each: along the sides of the body runs a dusky or deep brown band, beneath which the colour is much paler, forming almost a white band: the colour of this animal, however, like that of the preceding species, appears to vary in different specimens. It is a native of America, as well as of Jamaica and other West-Indian islands. It is also found, according to Cepede,

* This species seems much allied to the *L. aurata* of Linnæus, the synonyms to which in the *Systema Naturæ* seem to be applied with no very great precision.

in some parts of the old continent, and in particular in the island of Sardinia, where it is known by the name of *Tiligugu*.

GALLIWASP.

Lacerta Occidua. L. subfusca, fasciis subundulatis transversis fuscis, pedibus brevibus, cauda mediocri.

Brownish Lizard, with subundulated transverse bands, short legs, and tail of middling length.

Galliwasps. *Sloan. Jam. 2. pl. 273. f. 9.*

Brown, Jam. p. 463.

THE Galliwasps differ from the *L. rufescens*, or Greater Scink, in being of a still larger size, and of a thicker form, as well as in having a somewhat shorter tail in proportion; but so great is the general similarity, that it might almost be considered as a variety rather than as truly distinct.

The general length of the Galliwasps is nearly two feet, from the nose to the tip of the tail, which, like the body, is thick and strong, tapering pretty suddenly towards the tip: the limbs are short, and the whole appearance of the animal remarkably stout and plump: the teeth are small in front, but as they approach the back part of the jaws they gradually increase in size, and much resemble the molares in the Mammalia. The Galliwasps are a native of the American islands, and seems to be particularly common in Jamaica, where it is said to frequent woody and marshy

districts. It is commonly of a palish brown colour, clouded with somewhat irregular bands of a deeper cast; but it is said occasionally to change its colour into a lively golden yellow. A similar change of colour seems also to take place in the Greater African Scink before described, since it is by some authors named *aurata*, though the real *L. aurata* of Linnæus, from the very brief specific character in the *Systema Naturæ*, seems not very easily determinable. The Galliwasp, according to Browne, in his *Natural History of Jamaica*, is reckoned the most venomous reptile in that island, and it is said that no creature can recover from its bite; but this he very properly considers as merely a popular error. It grows, according to that author, to two feet or more in length.

VAR. ?

Australasian Galliwasp.

Lacerta Scincoides. Scincoid Lizard. *Nat. Misc. pl.* 179.

Scincoid, or Scink-formed Lizard. *White's Journal of a Voyage to New South Wales*, p. 242. *pl.* 30.

THIS I consider as a variety of the preceding, with which it agrees in size and general appearance, but has larger scales, a longer tail in proportion, and is of a somewhat darker colour; the sides and tail being variegated with deep brown and somewhat irregular transverse bands, and on each side the neck is commonly a longitudinal brown spot or patch. It is a native of New Holland, and is very accurately figured

in Mr. White's Journal above referred to. The tongue in this, as well as in the other Scinks, is short, flat, rounded, and entire; not forked as in most Lizards.

SPOTTED SCINK.

Lacerta Guttata. *L. cauda tereti longa maculis quatuor transversis & apice nigris, corpore supra cano albido guttato, subtus albido.* *Lin. Syst. Nat. Gmel. p. 1078. Lepechin. it. 1. p. 317. t. 22. f. 2, 3.*

Grey Lizard, spotted with white, with long tail marked by four transverse black bands and with black tip.

A VERY small species, not much exceeding three inches in length: sufficiently described in the specific character: native of the *Ural* desert, where it was observed by *Lepechin*.

OCELLATED SCINK.

Lacerta Ocellata. *L. cauda tereti brevi corpore subtus albo, supra ex griseo virescente, ocellis subrotundis radio fuscis, disco rectangulo albis.* *Lin. Syst. Nat. Gmel. p. 1077. Forsk. F. Arab. p. 13.*

Greenish-grey Lizard, white beneath, marked above with roundish ocellated brown spots with white rectangular disks.

LENGTH about a span: body depressed: feet short, pentadactyle: no femoral warts: the other particulars sufficiently described by the specific

SALAMANDER.

*Hill sculp.*

(GREAT WATER-NENT).

character : native of Egypt, about the neighbourhood of houses, &c. : observed by Forskal.

Salamanders, Newts, or Efts.

SALAMANDER.

Lacerta Salamandra. *L. nigra luteo maculata, cauda tereti mediocri.*

Black Lizard, spotted with gold-colour, with tail of middling length.

Lacerta Salamandra. *L. cauda tereti brevi, pedibus muticis, palmis tetradactylis, corpore poroso nudo.* Lin. Syst. Nat. p. 371.

Salamandra terrestris. Aldr. Quad. 641. Raj. Quadr. 273. Gesn. Quadr. 80.

THE Salamander, so long the subject of popular error, and of which so many idle tales have been recited by the more ancient naturalists, is an inhabitant of many parts of Germany, Italy, France, &c. but does not appear to have been discovered in England. It delights in moist and shady places; woods, &c. and is chiefly seen during a rainy season. In the winter it lies concealed in the hollows about the roots of old trees; in subterraneous recesses, or in the cavities of old walls, &c. The Salamander is easily distinguished by its colours; being of a deep shining black, variegated with large, oblong, and rather irregular patches of bright orange-yellow, which, on each side the back, are commonly so disposed as to form a pair of interrupted longi-

tudinal stripes: the sides are marked by many large, transverse wrinkles, the intermediate spaces rising into strongly marked convexities; and the sides of the tail often exhibit a similar appearance: on each side the back of the head are situated a pair of large tubercles, which are in reality the parotid glands, and are thus protuberant not only in some others of the Lizard tribe, but in a remarkable manner in the genus *Rana*: these parts, as well as the back and sides of the body, are beset in the Salamander with several large open pores or foramina, through which exsudes a peculiar fluid, serving to lubricate the skin, and which, on any irritation, is secreted in a more sudden and copious manner under the form of a whitish gluten, of a slightly acrimonious nature; and from the readiness with which the animal, when disturbed, appears to evacuate it, and that even occasionally to some distance, has arisen the long-continued popular error of the Salamander's being enabled to live uninjured in the fire, which it has been supposed capable of extinguishing by its natural coldness, and moisture: the real fact is, that, like any of the cold and glutinous animals, as snails, &c. it, of course, is not quite so instantaneously destroyed by the force of fire as an animal of a drier nature would be. The general length of the Salamander is about seven or eight inches, though it sometimes arrives at a much larger size: in the number and form of its spots it varies considerably, and is occasionally seen entirely

black: the tail is somewhat shorter* than the body, and of a round or cylindric form, gradually tapering to the extremity, which is rather obtuse than sharp. Like other Lizards of this tribe, the Salamander lives principally on insects, small snails, &c. its tongue, however, is not so formed as to catch these in a sudden manner, being short, broad, and in some degree confined, so as not to be darted out with celerity. It is capable of living in water as well as on land, and is sometimes found in stagnant pools, &c. Its general pace is slow, and its manners torpid.

A strange error appears to have prevailed relative to the supposed poisonous nature of this animal, and the malignity of its venom has even been considered as scarcely admitting a remedy. On this subject the writings of Gesner and Aldrovandus afford ample information; but it is useless, as well as unpleasing, in these days of general illumination, to detail the absurd and erroneous doctrines of past ages. It may be sufficient to observe, that the Salamander is perfectly innoxious, and incapable of inflicting either wound or poison on any of the larger animals, though it appears, from the experiments of Laurenti, that the common small grey lizard (*L. agil. var.*) is poisoned by biting a Salamander, and thus swallowing the secreted fluid of the skin; becoming

* It is remarkable, that in the beautiful representation of this animal in the frontispiece to Roesel's *Historia Ranarum*, the tail is longer than the body; but this must be considered as a rare occurrence.

almost immediately convulsed, and dying in a very short time afterwards.

The Salamander is a viviparous species; producing its young perfectly formed, having been first hatched from internal eggs, as in the Viper, and some other Amphibia. It is said to retire to the water in order to deposit its young, which, at their first exclusion, are furnished with ramified * branchial fins or processes on each side the neck, and which being merely temporary organs, are afterwards obliterated, as in the young of frogs and water-newts. The number of young produced at one birth by the Salamander is said sometimes to amount to thirty or forty.

* On this subject some confusion and disagreement will be found to take place in the works of different naturalists; Mr. Latreille seems to doubt very much whether the Salamander really produces her young in the water, as well as whether they are at first furnished with ramified branchial fins.

COMMON NEWT.

Lacerta Vulgaris. L. fusco-flavescens, linea dorsali duplici fusca, abdomine croceo fusco-maculato.

Yellowish-brown Newt, with a double brown dorsal line, and orange-coloured abdomen, spotted with brown.

Lacerta vulgaris. L. cauda tereti mediocri, pedibus unguiculatis, palmis tetradactylis, dorso linea duplici fusca. Linn. Syst. Nat. p. 370. Faun. Suec. 283.

Brown Lizard. *Pennant Brit. Zool. 3. p. 23. pl. 2.*

Common Newt. *Nat. Misc. vol. 9. pl. 118.*

THIS, which is the smallest of the British Lizards, is altogether a terrestrial species. It is commonly seen in gardens, and not unfrequently in the neighbourhood of dunghills, &c. It also occasionally makes its way into cellars in the manner of the slug, the toad, &c. Linnæus, in the twelfth edition of the *Systema Naturæ*, seems to suppose it an inhabitant of the water during its young or larva state. I can, however, safely affirm, that I have more than once met with specimens in perfectly dry situations, and at a distance from any waters, so extremely minute as scarce to equal half an inch in length, and which yet appeared to differ in no respect, except in magnitude, from the full grown animal. I am, therefore, inclined to suppose it a viviparous species. Its general length is about three inches and a half, and its colour yellowish brown above, with a double, narrow, dorsal line or streak of a deeper tinge; the under parts bright orange, spotted with brown.

GREAT WATER-NEWT.

Lacerta Palustris. *L. nigricans, lateribus albedo-punctatis, abdomine croceo maculis inæqualibus nigris.*

Blackish Newt, with the sides speckled with white; the abdomen orange, with irregular black spots.

Lacerta palustris. *L. cauda lanceolata mediocri, pedibus muticis, palmis tetradactylis.* *Lin. Syst. Nat. p. 370.*

The warted Newt, *Nat. Misc. 8, pl. 279.*

THE larger or warted Water-Newt is considerably allied to the Salamander in its general appearance, though of inferior size, and marked by a different distribution of colours. It also differs from that species in the highly conspicuous dorsal crest, or elevated and irregularly sinuated process with which the male is furnished. This species, when full grown, measures from about five and a half to six inches in length, and sometimes rather more. Its colour on the upper parts is an extremely dark or blackish brown, the sides being marked with numerous, small, scattered, whitish specks or granulations: the under parts are of a bright orange-colour, variegated with numerous, large, irregular spots or patches of deep black: the tail is of a flattened form, with thin or sharp edges, and with an acute termination: on each side the tail, in the male, is a silvery-white, broad band or stripe, accompanied by a blueish tinge: this lateral tail-stripe, as well as the dorsal crest or process, is generally far less conspicuous, and

even sometimes entirely wanting, in the female: the eyes are of a bright gold-colour; the head rather small than large; the limbs short; the fore feet divided into four, and the hind into five toes, all of which are destitute of claws. This animal is by no means an infrequent inhabitant of the clearer and colder kinds of stagnant waters, and is also occasionally met with in damp and shady situations, under trees, hedges, &c. &c. It is, in this country at least, a much rarer species than the small or common water-newt, with which it appears to have been confounded by some authors, and among others by the Count de Ceppe, in his History of Oviparous Quadrupeds. The male is most accurately represented in the present publication, on the same plate with the Salamander, with which, as before observed, it seems to have a considerable degree of affinity. It lives principally on insects. Though an innoxious species, and perfectly incapable of injuring any of the larger animals, yet it appears, from the experiments of Laurenti, that the natural exsudation or secreted moisture of its skin is fatal, like that of the Salamander, to the small varieties of the *Lacerta agilis*, several of which, on biting this animal, soon became paralytic on the fore legs, were seized with a general weakness, and died without any convulsive motions.

COMMON WATER-NEWT.

Lacerta Aquatica. *L. olivaceo-fusca nigro maculata, subtus crocea, cauda ancipiti lateribus sinuata.*

Olive-brown Water-Newt, spotted with black, with orange-coloured abdomen, and sharp-edged sinuated tail.

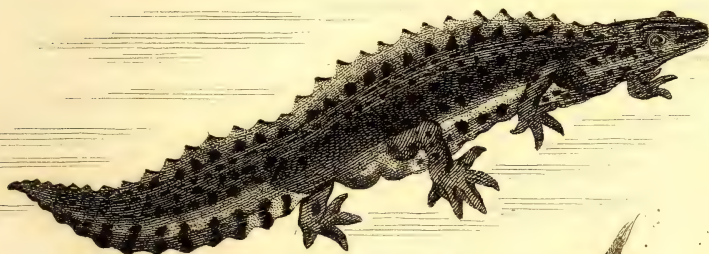
Lacerta Aquatica. *L. cauda teretinscula mediocri, pedibus muticis, palmis tetradactylis.* *Lin. Syst. Nat. p. 370.*

The Smaller or Common Water-Newt. *Nat. Misc. 11. pl. 412.*

THIS, which in England occurs in almost every soft stagnant water, is a much smaller species than the preceding; and though the different specimens occasionally vary very considerably as to the cast of colour, yet the animal may at all times be very readily distinguished from the former. Its general length is about three inches and a half, and it very rarely exceeds that of four inches at most. The male is distinguishable at first sight from the female by its very conspicuous dorsal crest or process, which is broader in proportion, more strongly elevated, and more regularly sinuated than that of the preceding species: the sinuations are continued to the very tip of the tail on the upper part, and take place likewise in a similar proportion on the under part as far as the junction of the tail with the abdomen; whereas in the former species the upper part alone of the tail can properly be said to be crested: this wide process, or sinuated part, is remarkably transparent, and when viewed with a lens of even moderately magnifying power, exhibits very distinctly the ramifications of the blood-vessels dispersed through it:



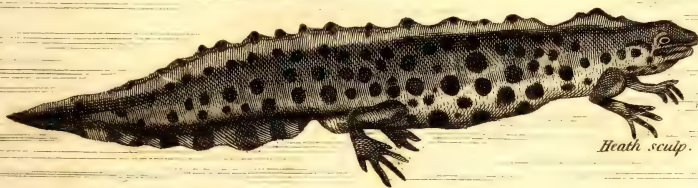
LAC: PUNCTATA. Latreille.



LARVÆ of common Water Newt.



LAC: PUNCTATA FEM. Latreille.



Heath sculp.

COMMON WATER NEWT.

but if examined by the microscope, is, perhaps, of all other objects that can be selected for that purpose, the most eligible for exhibiting a general view of the circulation ; shewing, in the most distinct and beautiful manner, the rapid current of the blood, the particles of which, in this animal, as well as in the rest of the Amphibia, are of an oval form ; not round, as in the Mammalia. In the greater Water-Newt, on the contrary, this part, being nearly opake, can by no means advantageously exhibit the same phænomenon. The female is almost destitute of the dorsal crest, but the tail is furnished with an approach to it, though far less conspicuous than in the male. The general colour of the male is olive-brown, beautifully and distinctly marked with numerous, round, black spots, dispersed over every part of the animal, but largest and most conspicuous on the sides and tail : the abdomen is orange-coloured, the black spots often appearing rather less intense on that part than on the back. The female differs very considerably in colour, being generally of a pale yellowish brown, much less distinctly spotted, and from the want of the dorsal crest, might be almost mistaken for a different species by a person inconversant in the history of the animal. On the top of the head, in both sexes, are three or four longitudinal dusky streaks : the eyes are small and gold-coloured : the fore feet tetradactylous ; the hind pentadactylous ; all destitute of claws, and in some specimens more or less approaching to a kind of palmated appearance towards the base, as

in the sixth figure of the sixth plate of Mons. Latreille's work on the Salamanders of France; which figure appears to me to represent no other than a very fine specimen of the male of the present species, though considered as different by Mons. Latreille, and distinguished by the title of *punctata*. It is certain that the water-newt varies considerably in the cast of its colour at different times of the year, and in different states of the weather, even in the course of the same day; and if taken out of soft water, and suddenly plunged into that of a colder temperature, will almost immediately become of a considerably darker tinge than before. The breadth of the tail, and that of the toes, seems also to be occasionally liable, in this animal, to considerable variation: I cannot, therefore, prevail upon myself to consider all the water-newts described by Mons. Latreille in the above publication as specifically distinct; and it is remarkable that that which Mons. L. expressly describes and figures under the title of *palmata*, is in reality far less palmated than his *punctata*, before mentioned, as will be evident on inspecting the 6th plate of that author's own work.

The Water Newt breeds in the early part of the spring, depositing small oblong* strings or clus-

* According to Spallanzani, the ova are of a kidney-shaped form, and seem, in reality, to be so many ready-formed larvæ, since, long before they leave the gluten in which they are imbedded, their motions are very brisk and frequent: they liberate themselves from the surrounding gluten in about ten days; the branchial fins are visible on their first exclusion, and the rudi-

ters of spawn, from which are soon hatched the larvæ or young, which, for a considerable period, are furnished with a triple pair of ramified branchial fins or processes on each side the neck ; thus giving the animal, in some degree, the appearance of a small fish. These parts, after having served their temporary purpose, of assisting the respiration of the animal, during its growing state, are gradually obliterated.

Water-Newts frequently cast their skins, which may be occasionally observed floating in the waters they inhabit, and are sometimes so perfect as to exhibit the whole form of the complete animal.

The Water-Newts are remarkable for a high degree of reproductive power, and have been known to exhibit the restoration of their legs, tails, and even, according to Dr. Blumenbach, of the eyes themselves, after having been deprived of them by cutting. That the eyes of the com-

ments of the fore legs soon begin to appear, and in something more than a fortnight those of the hind legs become visible ; the branchial fins become obliterated about the beginning of September, at which time the animal appears in its perfect form. It may be added, that as these animals may be said in some degree to verify the celebrated and seemingly paradoxical case recorded by Averroes, and so wittily commented upon by Sir Thomas Brown *, it should seem that hybrid productions may be more frequent between these than other amphibia ; and this may account for the numerous varieties occasionally observed and described by authors.

mon green Lizard (*Lac. agilis*) have been restored to their former fullness and strength after being punctured with a needle so as to let out the aqueous humour, is an observation recorded by Pliny*, and referred to by Mr. Schneider in the first fasciculus of his work entitled *Historia Amphibiorum*.

It has been already observed, in the general description of the Amphibia, at the beginning of this volume, that they are tenacious of life, and that water-newts have been found completely imbedded in masses of ice, in which they must have remained some weeks, or even, perhaps, months, and yet on the dissolution of the ice, have been restored to their former vigour. It is remarkable that they are very readily killed by being plunged into salt water, or rubbed on the back for a short time with common salt.

I must not omit to add, that the *L. palustris* and *aquatica*† have by some writers been consi-

* Speaking of various remedies for blindness, Pliny says, "Lacertas quoque pluribus modis ad oculorum remedia assumunt.—Alii terram substernunt Lacertæ viridi excoecatæ, et una in vitreo vase annulos includunt e ferro solido vel auro: cum recepissem visum lacertam apparuerit per vitrum, emissæ ea, annuli contra lippitudinem utuntur."—*Plin. Hist. Nat. lib. 29. sect. 28.*

† Linnæus seems not to have understood clearly the nature of this animal; since, after its specific character, in the 12th edit. of the *Systema Naturæ*, he proposes a question; whether it may not be the Larva of the *Lacerta vulgaris*? and in a former edition of the same work he appears to think it the Larva of the *L. agilis*; upon which query Laurenti makes the following observation: "Linnæus interrogat: an forte larva lacertæ agilis? Inepta

dered as constituting merely one of the same species; but this can surely be accounted for on no other supposition than the want of an opportunity of contemplating the animals in their living state. Among those who have thus conjoined, or rather confounded them, must be numbered the Count de Cepede, whose negligence in this respect affords a curious contrast to the opposite extreme of Mr. Latreille and Mr. Schneider.

LEVERIAN WATER-NEWT.

IN the Leverian Museum is a specimen of an extremely large water-newt, supposed to be a non-descript species. Its total length is seventeen inches and a half, of which the tail measures six inches and a half, from the setting on of the thighs, but if measured from the commencement of the upper membranaceous edge, only four inches and three quarters. The head is flattened and shaped somewhat like that of a burbot; the mouth moderately wide; the upper jaw furnished in front with two concentric rows of very numerous, small, setaceous teeth; the rows being set about the eighth of an inch apart: in the under jaw is a single row only: the eyes are small, round, and situated on each side the front of the head,

quæstio! Cl. Du Fay in Act. Gall. ostendit generare oviparam; ostendit præterea, & pinxit metamorphoses, &c. Legat Linnæus, et cessabit tandem interrogare."

and consequently very remote from each other, and not near so far backward as the corners of the mouth: the body is longish, moderately plump or thick, and is pale brown, marked, in a confluent manner, with darker variegations: from the fore to the hind legs runs an obscurely-elevated lateral line: the legs are about an inch in length, and both fore and hind legs are furnished along the whole length of their back part with a dilated skin or crest, which, just above each foot, is sinuated by two pretty deep scollops or insections: the tail resembles that of the common water-newt, but is neither so long nor so deeply finned or crested in proportion, and its termination is rather obtuse than acute: the feet are very small: the fore feet furnished with four, and the hind with five toes, all destitute of claws, or at least the appearance of those parts is but very obscure. No particular history is annexed to the specimen, nor is its native place known.

SPOTTED WATER-NEWT.

Lacerta Maculata. *L. nigricans, dorso longitudinaliter duplici serie albo maculato.*

Blackish Water-Newt, with a double row of white spots down the back.

Lacerta punctata. *Lin. Syst. Nat. Gmel. p. 1076.*

Spotted Eft. *Catesb. Car. Append. t. 10.*

THIS species, according to Catesby, is an inhabitant of ponds, ditches, and other stagnant waters

CHALCIDES LIZARD.



H. Smith sculp.

in Carolina. It is about five inches in length, with a rather large head; the fore feet have four and the hind five toes: its colour is deep brown, with a double row of white spots, from the top of the head to the tail, where it becomes a single row to the end. Catesby adds, that it is equally inoffensive with the common water-newts of Europe.

Snake-Lizards, with extremely long bodies, and short legs.

CHALCIDES LIZARD.

Lacerta Chalcides. *L. ferruginea, pedibus tridactylis brevissimis, corpore longissimo lineis sex dorsalibus fuscis.*

Ferruginous Lizard, with very short tridactyle feet, and very long body with six brown dorsal lines.

Lacerta Chalcides. *L. cauda tereti longa, pedibus pentadactylis brevissimis.* *Lin. Syst. Nat. p. 369.*

Cæcilia major. *Imperat. Nat. 97.*

Lacerta Chalcidica. *Aldrov. Quadr. 638.*

THE Chalcides is a native of many of the warmer parts of Europe, as well as of Africa, and is found of different sizes, from the length of a few inches to that of a foot, or even more. Its general length, however, seems to be eight or nine inches. The head is covered in front with large scales, and is terminated by a slightly tapering, but not pointed snout: the eyes are small, and the openings of the ears very distinct: there is, properly speaking, no neck, the diameter continuing nearly equal from the head to the begin-

ning of the tail, which is often longer than the body, and gradually tapers to a small point: the legs are very short, and the feet still more so in proportion, consisting each of three toes, terminated by minute claws: the scales, on every part of the body, legs, and tail, are of a shape nearly resembling those of the Scinks, lying smoothly over each other in the manner of those of a fish: the colour of this animal is pale ferruginous or chestnut brown, lighter or of a yellow brown beneath: along the back are six deep brown lines or narrow bands, viz. two somewhat distant ones down the middle, and two approximated ones down each side: in the living animal the colour is generally said to have a kind of metallic or brassy cast, which seems to have given rise to the old name *Chalcides* and *Chalcidica*. This singular Lizard is described by Linnæus as having the feet furnished with five toes, but whatever may have been the case with the individual specimen which he examined, it seems pretty certain that the general number is three. In the British Museum is an elegant specimen, from which the annexed figure is engraved. The *Chalcides* is an animal of a harmless nature, frequenting moist shady places, moving rather slowly, and feeding on insects, small worms, &c. It is a viviparous species, and is said to produce a great many young. The Serpents to which it bears the nearest alliance, in point of form, are those of the genus *Anguis*, and particularly the *A. fragilis*, or common *Slow-Worm*.

ANNULATED CHALCIDES.

Chalcide. *Cepede ovip.* p. 443.

THIS, which is described by the Count de Cepede, under the name of *Chalcide*, appears extremely nearly allied to the former, but instead of having imbricated fish-like scales, as in that animal, it is marked into a continued series of annuli throughout its whole length, the scales being square instead of rounded. The specimen described was of a dark colour, with a brassy cast: the body measured two inches six lines in length, being somewhat shorter than the tail: the feet still shorter than in the former species, measuring scarcely more than a line in length, and being all tridactyle: the number of annuli on the body was forty-eight. The native country of this kind seems unknown.

 SERPENT LIZARD.

Lacerta Serpens. *L. capite corpore caudaque continuis cylindricis, pedibus minimis, remotissimis, pentadactylis unguiculatis.* Lin. *Syst. Nat. Gmel.* p. 1078. *Bloch. Besch. der Berl. Naturf.* 2. p. 28. t. 2.

Lizard with head, body, and tail of a continued cylindric form, and very small, remote, pentadactyle feet.

Anguis quadrupes. *A. pedibus quatuor.* Lin. *Syst. Nat.* p. 390.

THIS, which is a native of Java, measures about five inches and a half in length, and is entirely

covered with imbricated scales: its colour is either cinereous or pale ferruginous above, marked with from fifteen to twenty dusky lines, and beneath cinereous with a silvery gloss.

ANGUINE LIZARD.

Lacerta Anguina. L. cauda verticillata extremo rigidula, corpore striato, pedibus adactylis subulatis. Lin. Syst. Nat. p. 371.

Lizard with long body, extremely long tail, and subulated adactyle feet.

Vermis serpentiformis ex Africa. *Seb. 2. p. 70. t. 68. f. 7, 8.*

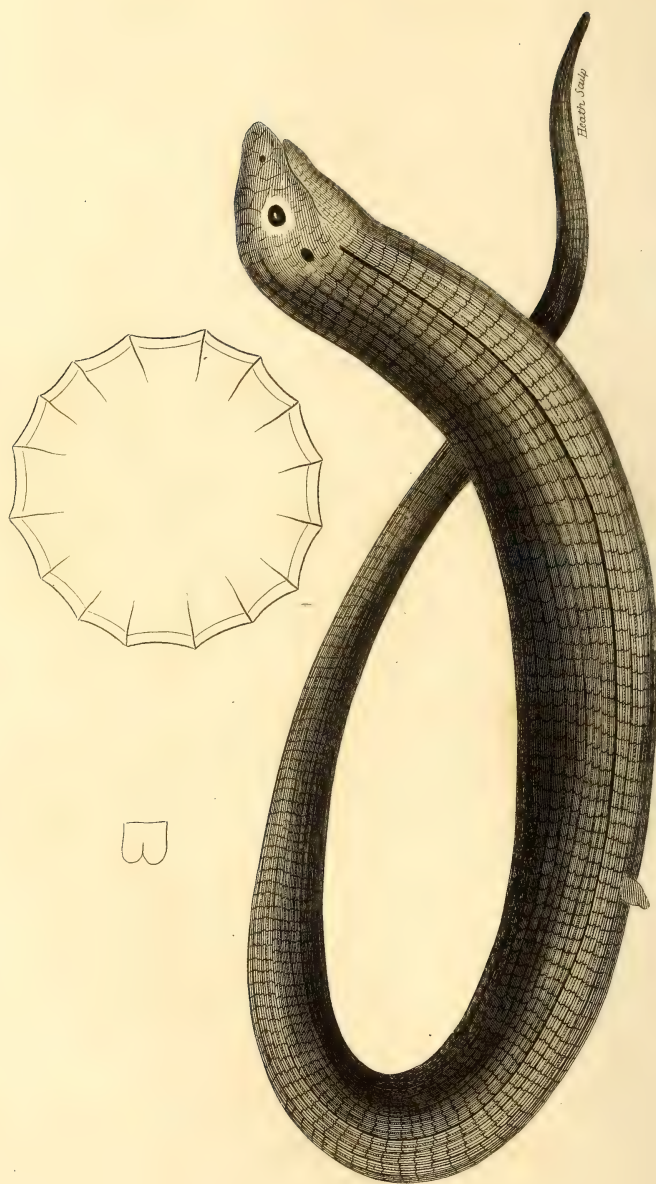
DESCRIBED by Linnæus, apparently from Seba's figure, which is about fifteen inches in length, the body measuring only four. The head is rather small, the nose taper, the legs very short, placed very near the head and vent, and apparently terminating in one undivided toe or process: the whole animal appears covered with ovate scales, and is brown above, ash-coloured on the sides, and yellowish beneath; the upper surface marked throughout its whole length by several dark lines or stripes. Native, according to Seba, of the Cape of Good Hope, where it is found in great plenty in the water and about the rocks in Table Bay.

ANGUINE LIZARD.



Both scales.





APODAL LIZARD.

APODAL LIZARD.

Lacerta Apus. *L. anguiformis ferruginea, pedibus anterioribus nullis, posterioribus brevissimis monodactylis.*

Ferruginous snake-formed Lizard, without fore feet, and with very short monodactylous hind feet.

Lacerta apus. *L. capite & corpore continuis una cum cauda longa teretibus imbricatis pallidis, pedibus anterioribus nullis, posteriorum subdidactylorum vestigio.* *Pall. Nov. Comm. Petrop. 19. p. 435. t. 9. Lin. Syst. Nat. Gmel. p. 1079.*

A STILL nearer approach is made to the snake tribe by this large and singular Lizard, than even by the Chalcides. It is a native of Greece, the Southern parts of Siberia, and doubtless of many other parts of Europe and Asia, though it seems to have been but recently known to naturalists, Dr. Pallas, who discovered it in the south of Siberia, having been its first describer. It is found of the length of near three feet, and so perfectly resembles the general form of a large snake, that it is not without a near inspection that it is ascertained to belong to the race of Lizards; being furnished merely with a pair of very short and somewhat acuminate processes by way of feet, situated at a vast distance from the fore parts of the body, nearly on each side the vent: the processes have no divisions or toes, but seem to form one simple projection, with a slight indenture only: the head is rather large, and covered with large scales: the snout rather taper; the upper jaw somewhat projecting over the lower: the mouth moderately wide: the ears very conspicuous: there is no ap-

pearance of neck ; the body tapering in the most gradual manner from the head to the end of the tail, which is longer than the body, and terminates in a point. The whole animal is covered with longitudinal rows of moderately large scales with emarginated tips, and so disposed as to form so many prominent or carinated lines along the surface, in consequence of which a transverse section of the body, in any part, presents a multangular outline. Along each side of the body, from the head to near half the length of the tail, runs a deep continued furrow or channel. The colour of this Lizard is a pale chesnut or ferruginous above, and pale yellow-brown beneath. It is singular that an animal of so large a size should so long have remained unknown to systematic naturalists. Two very fine specimens were brought from Greece by the late Dr. John Sibthorp, Professor of Botany in the University of Oxford, and from one of these was drawn the accurate figure engraved on the annexed plate. The animal frequents moist and shady places, and appears to be of a harmless character.

BIPED LIZARD.

Lacerta Bipes. *L. corpore subæquali tereti imbricato pallido, squamarum singularum puncto fusco, pedibus anterioribus nullis, posteribus didactylis muticis.* Lin. Syst. Nat. Gmel. p. 1079.

Long-bodied cylindric pale-yellow Lizard, speckled with brown, without fore-feet, and with very small didactylous hind-feet.

Anguis bipes. *A. squamis abdominalibus 100, caudalibus 60.* Lin. Mus. Ad. Frid. p. 21. t. 28. f. 3.

Serpens, &c. Seb. 1. t. 53. f. 9. & t. 86. f. 3.

A SMALL species, said to be found in South America and in India. Length about six inches: diameter scarcely that of a goose quill: colour pale yellow, minutely speckled with brown: head small; body cylindric, tail very short and taper but not sharp-pointed: on each side the vent is a small subulated foot, which being closely examined is found to be divided into two small and unequal toes, without claws. This Lizard is described by Linnæus in the Museum Adolphi Frederici as a species of snake, under the title of *Anguis bipes*. It is also figured in the same work, but more elegantly in that of Seba.

LUMBRICIFORM LIZARD.

Lacerta Lumbricoides. *L. bipes cylindrica, squamis quadratis annulata, sulco laterali, pedibus posterioribus nullis.*

Two-footed cylindric Lizard, annulated with square scales, with a lateral furrow and no hind feet.

Le Cannellé. *Cepede ovip. p. 613. pl. 41.*

Lacerta Lumbricoides. Lumbriciform Lizard. *Nat. Misc. vol. 6. pl. 212.*

NATIVE of Mexico. First described by the Count de Cepede in his History of Oviparous

Quadrupeds. Length eight inches : diameter near half an inch : length of head three lines ; of the tail one inch : both head and tail, as in the genus *Amphisbæna*, scarce distinguished by any difference of diameter from the body, which is of uniform breadth throughout, and is covered entirely by annuli of square scales, as in the *Amphisbæna fuliginosa* : along the whole body, from head to tail, on each side, runs a continued sulcus or channel, separating the upper or lower surfaces : legs only two ; extremely short, placed near the head, and divided into five minute toes with correspondent claws : not the least appearance of hind legs : vent surrounded on its upper part by a row of small perforated papillæ, as in the thighs of the green lizard, &c. Colour of the living animal suspected to be green, paler beneath.

The specimen preserved in the British Museum is about half the size of that described by the Count de Ceppe, and is of a pale ferruginous colour above, and yellowish white beneath.

END OF PART I.

GENERAL ZOOLOGY

or

SYSTEMATIC NATURAL HISTORY

by

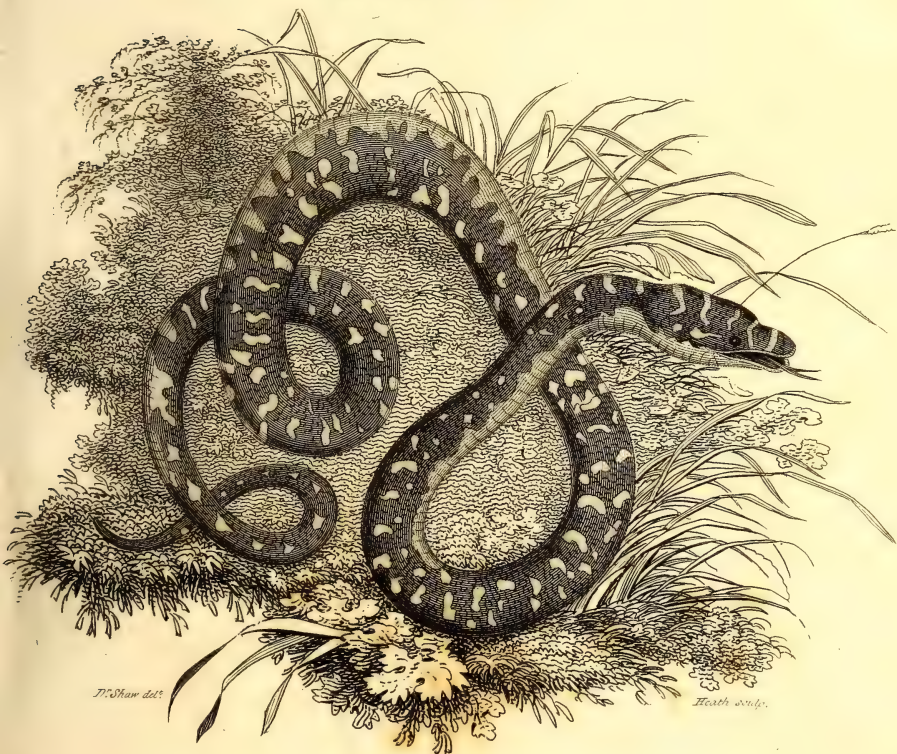
GEORGE SHAW, M.D. F.R.S. &c.

WITH PLATES

from the first Authorities and most select specimens

Engraved principally by

MR. HEATH.



VOL. III. Part II.

AMPHIBIA.

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1802.

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GENERAL ZOOLOGY.

VOLUME III.—PART II.

AMPHIBIA.

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1802.

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ERRATA.—VOL. III. PART II.

P. 449, l. 1. for *punctato* read *punctatis*.P. 482, l. 1. for *dorsal* read *dorsali*.

Directions for placing the Plates in vol. III. part II.

The Vignette represents a species of Australasian Snake not yet fully described: it has the habit of a Boa, is covered with very small scales, and varied with irregular yellow spots on a blackish ground: length about 14 inches. See *White's Voyage*, p. 259. pl. 46.

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AMPHIBIA.

ORDER

SERPENTES.

THESE animals are sufficiently distinguished from the preceding tribes of Amphibia by their total want of feet, moving by the assistance of their scales, and their general powers of contortion.

The distinction of species in this numerous tribe is often peculiarly difficult. Linnæus persuaded himself that an infallible criterion might be found in the number of scaly plates on the abdomen and beneath the tail; and, accordingly, attempted in the *Systema Naturæ* to discriminate the species by this mark alone: experience, however, has sufficiently shown that, though often highly useful in the investigation of these animals, it is yet by much too uncertain and variable to be permitted to stand as an established specific test; and it is to be lamented that Linnæus should have so little availed himself of other more ob-

vious characters. The colour is indeed often variable, but the pattern, or general distribution of markings in each species, appears to be more constant: the relative size of the head, the length of the body and tail, the size, smoothness, or roughness of the scales, as well as their shape in different parts of the animal, often afford pretty certain specific marks.

The distinction of Serpents into poisonous and innoxious can only be known by an accurate examination of their teeth; the fangs or poisoning teeth being always of a tubular structure, and calculated for the conveyance or injection of the poisonous fluid from a peculiar reservoir communicating with the fang on each side of the head: the fangs are always situated in the anterior and exterior part of the upper jaw, and are generally, but not always, of much larger size than the other teeth; they are also frequently accompanied by some smaller or subsidiary fangs, apparently destined to supply the principal ones when lost either by age or accident. The fangs are situated in a peculiar bone, so articulated with the rest of the jaw as to elevate or depress them at the pleasure of the animal: in a quiescent state they are recumbent, with their points directed inwards or backwards; but when the animal is inclined to use them as weapons of offence, their position is altered by the peculiar mechanism of the above-mentioned bone in which they are rooted, and they become almost perpendicular.

Head of poisonous Snake

of innoxious D.

87



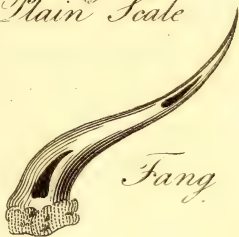
Tail of Crocodile



Carinated Scale



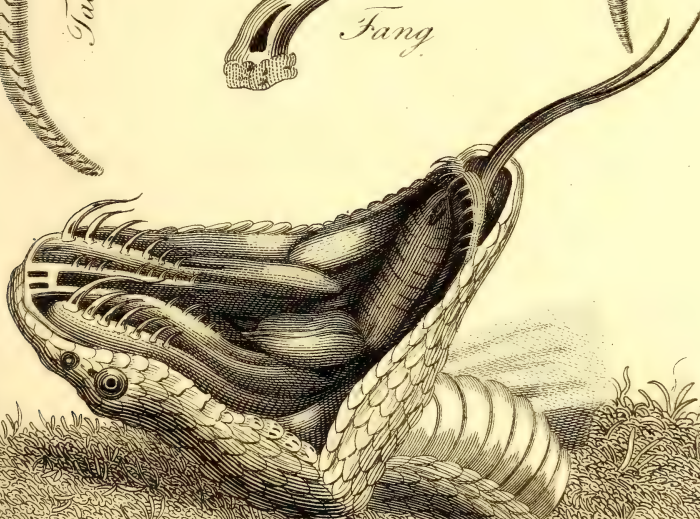
Plain Scale



Fang



Tail of Boa



HEAD of RATTLE-SNAKE.

A general rule for the determination of the existence or non-existence of these organs in any species of Serpent is proposed in a paper relative to the Amphibia by Dr. Gray, and published in the Philosophical Transactions for the year 1788. The fangs, according to Dr. Gray, may be distinguished with great ease, and, as he believes also, with great certainty, by the following simple method. When it is discovered that there is something like teeth in the anterior and exterior part of the upper jaw, which situation he considers as the only one in which venomous fangs are ever found, let a pin or other hard body be drawn from that part of the jaw to the angle of the mouth; (which operation may, for greater certainty, be tried on each side). If no more teeth be felt in that line, it may, he thinks, be fairly concluded that those first discovered are fangs, and that the serpent is consequently venomous: if, on the contrary, the teeth first discovered be observed not to stand alone, but to be only a part of a complete row, it may as certainly be concluded that the serpent is not venomous. This rule, however, like most others, may have its exceptions, and perhaps the most legitimate test of real fangs in a serpent is their tubular structure, which may always be easily detected by the assistance of a proper magnifier. It is to be observed, that all serpents, whether poisonous or not, have besides the teeth (whether fangs or simple teeth), in the sides of the upper jaw, two additional or interior rows, which are generally much smaller than the rest,

and frequently scarce visible: the general rule, therefore, is, that all venomous serpents have only two rows of true or proper teeth in the upper jaw, and that all others have four.

A head entirely covered with small scales is in some degree a character, but by no means a universal one, of poisonous serpents; as are also carinated scales on the head and body, or such as are furnished with a prominent middle line.

All Serpents are in the habit of casting their skin at certain periods; in temperate regions annually; in the warmer perhaps more frequently. The serpents of the temperate and cold climates also conceal themselves, during the winter, in cavities beneath the surface of the ground, or in any other convenient places of retirement, and pass the winter in a state more or less approaching, in the different species, to complete torpidity. It may be added, that some serpents are viviparous, as, the Rattle-Snake, the Viper, and many others of the poisonous kind, while the Common Snake, and probably the major part of the innoxious serpents, are oviparous, depositing their eggs in a kind of string or chain in any warm and close situation, where they are afterwards hatched.

The broad undivided laminæ or scaly plates on the bellies of Serpents are termed *scuta*, and the smaller or divided plates beneath the tail are called *squamæ subcaudales*, or subcaudal scales, and from these different kinds of laminæ the Linnæan genera of Serpents are chiefly instituted.

BANDED RATTLE SNAKE.



CROTALUS. RATTLE-SNAKE.

Generic Character.

<i>Scuta</i> abdominalia.		<i>Scuta</i> on the abdomen.
<i>Scuta Squamæque</i> subcaudales.		<i>Scuta</i> and <i>Squamæ</i> beneath the tail.
<i>Crepitaculum</i> terminale caudæ.		<i>Rattle</i> terminating the tail.

BANDED RATTLE-SNAKE.

Crotalus Horridus. C. fusco-flavescens, fasciis transversis nigricantibus.

Yellowish-brown Rattle-Snake, with blackish transverse bands.

Crotalus horridus. Lin. Syst. Nat. p. 372.

Vipera caudisona Americana. Catesb. Car. 2. t. 41.

Abdominal scuta 167, subcaudal 23.

THE genus *Crotalus*, or Rattle-Snake, affords the most signal examples of the powerfully destructive poison with which some of the serpent tribe are furnished; instances having frequently occurred in which the bite of these snakes has proved fatal to mankind in the space even of a very few minutes.

Till the discovery of the Western Hemisphere the knowledge of these serpents was concealed from the rest of the world, and philosophers then first beheld with amazement a reptile of the most

fatal nature, furnished, as if by a peculiar institution of Providence, with an instrument capable, in general, of warning mankind of their danger in too near an approach.

The different species of Rattle-Snakes seem to have been generally confounded with each other; and even Catesby, who travelled in those parts of North America where it is found, seems to have been unacquainted with one of the most remarkable species, and to have particularly described the Banded Rattle-Snake only, which he has also figured with sufficient clearness to prevent its being confounded with any other kind, though not with that minute attention to all the particulars which the more improved state of Natural History at present demands.

This species is found, in general, from three to four or five feet in length, and is of a yellowish brown colour, marked throughout its whole length with several transverse and somewhat irregular fasciæ of deep brown, and from the head to some distance down the neck run two or three longitudinal stripes of the same colour; the head is large, flat, and covered with small scales; the rest of the upper parts with moderately large oval ones, all strongly carinated or furnished with a prominent line down the middle: the under parts are of a dingy yellowish brown colour, marked here and there with numerous dusky variegations and freckles: at the extremity of the tail is situated the rattle, consisting of several hard, dry, horny processes, the peculiar structure of which will be

more amply described hereafter, and which, on the least disturbance or irritation, is elevated and shaken in such a manner as to cause a strong or brisk rattling sound.

“The largest Rattle-Snake,” says Catesby, “which I ever saw, was about eight feet in length, and weighing between eight and nine pounds. This monster was sliding into the house of Colonel Blake of Carolina, and had certainly taken up his abode there undisturbed, had not the domestic animals alarmed the family with their repeated outcries: the hogs*, dogs, and poultry, united in their hatred to him, shewing the greatest consternation, by erecting their bristles and feathers, and expressing their wrath and indignation, surrounded him, but carefully kept their distance; while he, regardless of their threats, glided slowly along.” “It is not uncommon,” adds Mr. Catesby, “to have them come into houses; a very extraordinary instance of which happened to myself in the same gentleman’s house, in the month of February, 1723; the servant in making the bed in a ground room (but few minutes after I left it) on turning down the sheets, discovered a rattle-snake coiled between the sheets in the middle of the bed.” “They are the most inactive and slow moving snake,” adds this author, “of all others, and are never the aggressors, ex-

* Hogs, however, are, in general, said to be so little afraid of the rattle-snake, that they prey on it occasionally with great eagerness; seizing it in such a manner as to prevent it from doing them any injury, and devouring it.

cept in what they prey upon ; for unless they are disturbed they will not bite, and when provoked they give warning by shaking their rattles. These are commonly believed to be the most deadly serpent of any in these parts of America. I believe they are so, as being generally the largest, and making a deeper wound, and injecting a greater quantity of poison. The most successful remedy the Indians seem to have, is to suck the wound, which in a slight bite has sometimes a good effect ; though the recovered person never fails of having annual pains* at the time they were bit. They have likewise some roots which they pretend will effect a cure, particularly a kind of *Asarum*, commonly called Heart-Snake-Root, a kind of *Chrysanthemum*, called *St. Anthony's Cross*, and some others : but that which they rely on the most, and which most of the Virginian and Carolina Indians carry dry in their pockets, is a small tuberous root, which they procure from the remote parts of the country. This they chew, and swallow the juice, applying some to the wound. Having, by travelling much with the Indians, had frequent opportunities of seeing the direful effects of the bites of these snakes, it always seemed and was apparent to me, that the good effect usually attributed to these their remedies, is owing more to the force of Nature, or the slightness of the bite of a small snake in a muscular part, &c.

* This may perhaps be considered as doubtful, or may depend on other circumstances than the bite of the Rattle-Snake.

The person thus bitten I have known to survive without any assistance for many hours ; but where a Rattle-Snake with full force penetrates with his deadly fangs, and pricks a vein or an artery, inevitable death ensues, and that, as I have often seen, in less than two minutes. The Indians know their destiny the minute they are bit, and when they perceive it mortal, apply no remedy ; concluding all efforts in vain : if the bite happeneth in a fleshy part, they immediately cut it, to stop the current of the poison."

" The colour of the head of this Rattle-Snake is brown, the eye red, the upper part of the body of a brownish yellow, transversely marked with irregular broad black lists. The rattle is usually of a brown colour, composed of several horny membranous cells, of an undulated pyramidal figure, which are articulated one within another, so that the point of the first cell reaches as far as the basis or protuberant ring of the third, and so on ; which articulation being very loose, gives liberty to the parts of the cells that are inclosed within the outward rings, to strike against the sides of them, and so to cause the rattling noise which is heard when the snake shakes its tail."

" The charming, as it is commonly called, or attractive power this snake is said to have, of drawing to it small animals, and devouring them, is generally believed in America ; as for my own part I never saw the action, but a great many from whom I had it related, all agree in the manner of the process ; which is, that the animals,

particularly birds and squirrels (which principally are their prey), no sooner spy the snake, than they skip from spray to spray, hovering and approaching gradually nearer to their enemy, regardless of any other danger; but with distracted gestures and outcries, descend, though from the top of the loftiest trees, to the mouth of the snake, who openeth his jaws, takes them in, and in an instant swallows them."

On this subject Dr. Mead, in his work on poisons, expresses himself as follows:

"With respect to the use of the Rattle, a vulgar error has obtained, even among the learned, about it. It is commonly said that it is a kind contrivance of divine Providence, to give warning to passengers by the noise which this part makes when the creature moves, to keep out of the way of its mischief. Now this is a mistake. It is beyond all dispute that wisdom and goodness shine forth in all the works of the Creation; but the contrivance here is of another kind than is imagined. All the parts of animals are made either for the preservation of the individual, or for the propagation of its species: this before us is for the service of the individual. This snake lives chiefly upon squirrels and birds, which a reptile can never catch without the advantage of some management to bring them within its reach. The way is this. The Snake creeps to the foot of a tree, and, by shaking his rattle, awakens the little creatures which are lodged in it. They are so frightened at the sight of their enemy, who fixes his

lively piercing eyes upon one or other of them, that they have no power to get away, but leap about, from bough to bough, till they are quite tired, and at last, falling to the ground, they are snapped into his mouth. This is by the people of the country called *charming* the squirrels and birds."

Dr. Barton, professor of natural history in the University of Pennsylvania, in a memoir on the supposed fascinating power of the Rattle-Snake, imagines the whole to be no more than the fluttering of old birds in defence of their young, and which are themselves occasionally caught by the Rattle-Snake in consequence of too near an approach.

"Of the fascinating power of the Rattle-Snake," says Mr. Pennant*, "it is difficult to speak: authors of credit describe the effects. Birds have been seen to drop into its mouth, squirrels descend from their trees, and leverets run into its jaws. Terror and amazement seem to lay hold on these little animals: they make violent efforts to get away, still keeping their eyes fixed on those of the snake; at length, wearied with their movements, and frightened out of all capacity of knowing the course they ought to take, become at length the prey of the expecting devourer; probably in their last convulsive motion." The same author observes, that Rattle-Snakes in general swarm in the less inhabited parts of North America; but are now almost ex-

* Arct. Zool. suppl. 88.

tirpated in the more populous parts. None are found farther north than the mountains near lake *Champlain*; but infest South America, even as far as Brasil. They love woods and lofty hills, especially where the strata are rocky or chalky: the pass near *Niagara* abounds with them. Being slow of motion, they frequent the sides of rills, to make prey of frogs, or such animals as resort there to quench their thirst: are generally found during summer in pairs; in winter collecting in multitudes, and retiring under ground, beyond the reach of frost: tempted by the warmth of a spring day, they are often observed to creep out weak and languid: a person has seen a piece of ground covered with them, and killed with a rod between sixty and seventy; till overpowered with the stench, he was obliged to retire*.

The Rattle-Snake is a viviparous animal; producing its young in the month of June, generally about twelve in number; and which by September acquire the length of twelve inches. It is said to practise the same extraordinary mode of preserving its young from danger which is attributed to the Viper in Europe, viz. of receiving them into its mouth and swallowing them. Of this we have the attestation of M. de Beauvois†, who declares himself an eye-witness of the process. This gentleman saw a large Rattle-Snake, which he happened to disturb in his walks, and which immediately coiled itself up, opened its jaws, and

* Arct. Zool. suppl. p. 88. † American Phil. Trans. vol. iv.

instantly five small ones, which were lying by it, rushed into its mouth. The author retired and watched the snake, and in a quarter of an hour saw her again discharge them. He then approached it a second time, when the young retired into its mouth with greater celerity than before, and the snake immediately moved off among the grass and escaped. This happened at a place called *Pine-Log*, where M. de Beauvois staid some time with the Indians during an illness with which he was seized. M. de Beauvois adds, that in winter the Rattle-Snake retires into deep mossy loose soils beneath trees, &c. as well as in holes under ground.

From experiments made in Carolina by Captain Hall, and related in the Philosophical Transactions, it appears that a Rattle-Snake of about four feet long, being fastened to a stake fixed in the ground, bit three dogs, the first of which died in less than a quarter of a minute: the second, which was bitten a short time afterwards, in about two hours, in convulsions; and the third, which was bitten about half an hour afterwards, shewed the visible effects of the poison in about three hours, and died likewise. Four days after this, another dog was bitten, which died in half a minute, and then another, which died in four minutes. A cat which was bitten was found dead the next day. Eight days after this a frog was bitten, which died in two minutes, and a chicken of three months old in three minutes. The experiments having been discontinued some time for

want of subjects, a common black snake was procured, which was healthy and vigorous, and about three feet long. It was brought to the Rattle-Snake, when they bit each other, the black snake biting the Rattle-Snake so as to make it bleed. They were then separated, and in less than eight minutes the black snake died; while the Rattle-Snake, on the contrary, shewed no signs of indisposition, appearing as well as before. Lastly, in order to try whether the Rattle-Snake could poison itself, it was provoked to bite itself. The experiment succeeded, and the animal expired in less than twelve minutes.

According to experiments made by Mr. Vosmaer at the Hague, with a lively young Rattle-Snake which he received from Surinam, small birds, such as Sparrows, Greenfinches, &c. died sometimes in four, sometimes in ten, and sometimes in twenty minutes after having been bitten, and a mouse in a minute and half.

The anatomy of the Rattle-Snake is detailed with much exactness by Dr. Tyson in the Philosophical Transactions; and it appears that its internal structure in almost all respects resembles that of the Viper. The chief particulars are the following:

The wind-pipe, as in the Viper, as soon as it enters the lungs, consists of semi-annular cartilages, which, being joined at both ends to the membrane of the lungs, constitute a free or open channel, thus immediately transmitting the air to the vesicles of those organs, which are of very

great length, beginning near the throat, and running down three feet in length: the upper part of them, for the distance of about a foot from their origin, is composed of small vesiculæ or cells, as in the lungs of a Frog; and which, from the frequent branchings of the blood-vessels, appear of a florid red: this part tapers, proportionally to the body: the lowest part of it, near the heart, being moderately blown, is about five inches and a half in circumference: a little lower, for the space of about four inches, the cells gradually disappear, so that they seem at last to form only a reticular compages of *valculæ conniventes* on the inside of the membrane of the lungs: the greatest circumference here is about six inches: the remaining part of the organ is merely a large bladder, without any cellular subdivisions, and consists of a strong, transparent membrane, the circumference of which, when inflated, is about eight inches and a half. The lungs in the Water-Newt, and some other animals, are divided into two large lobes or simple bladders, without cellular subdivisions; in the frog, crocodile, &c. of two large lobes with cellular subdivisions; while in the Rattle-Snake, Viper, &c. both these kinds of structure are comprised; the fore part of the organ being filled with numerous internal vesicular subdivisions, while the remaining part is a mere lengthened bladder.

The œsophagus or gullet was two feet three inches in length, and marked by two distinct swellings or enlargements of very great size, so

as to represent two preparatory stomachs, as it were; nor was the real or proper stomach capable of so much distension as these: the length of the true stomach or third enlargement was nearly similar to that of the second enlargement of the œsophagus; it was much thicker than that part, and resembled in its fabric that of the Viper. From the pylorus the duct straitened again for about half an inch, and then formed a large intestine, the weaved rugæ of its internal coat presenting a curious and pleasing spectacle: this intestine, after some small windings, terminated in the rectum, which was of much smaller diameter. “In the promiscuous food which serpents take in (adds Dr. Tyson), which they always swallow whole, and in which there are always some parts unfit for digestion, and which must, therefore, be returned, the œsophagus here being very long, Nature has provided the above-mentioned swellings or enlargements of that part, where they may be respited, during the efforts made use of by the animal for that purpose, till collecting its force, it gives them, as it were, another and another lift, and at length ejects them; and if what is confidently affirmed be true, that, on occasion of danger, they receive their young into their mouths, these are fit places for receiving them.”

The heart was placed near the bottom or base of the trachea, on the right side of it: its length was an inch and a half, and its figure rather flat than round; encompassed with a pericardium;

the auricle being larger than the heart itself. It had only one ventricle, the valves being small and fleshy, and the inside of the ventricle distinguished by four or five cross furrows.

A little below the heart lay the liver, which was about an inch wide in the largest place, and seemed divided on one side by the vena cava into two lobes of unequal length; that on the left side being about ten inches, and that on the right a foot long. Its colour was a brown red, and its use, no doubt, the secreting of the gall, which was contained in a bladder, seated at some distance below it.

The fat in this animal was very plentiful, and the membrane to which it adhered seemed to be the omentum, which encompassed all the parts contained in the lower belly, and was joined to both sides of the ribs, running from thence to the rectum, and forming a bag which enveloped the parts there, but was free, and not conjoined towards the belly: there was no diaphragm or separation between the heart and lungs and the abdominal viscera.

The kidneys, which lay towards the back, on each side of the spine, were not very firmly conjoined, and were about seven inches in length; that on the right side somewhat exceeding that of the left: each were about an inch in diameter, and though forming one continued body, yet plainly distinguishable into several smaller kidneys, to the number of fifteen; all so curiously contrived, with such an elegant compages of

blood-vessels and tubes, as to compose so many regularly-formed bodies, which could not be viewed without admiration.

The tongue was in all respects like that of a Viper, being composed of two long and round bodies, contiguous, and joined together from the root to half its length: this part may be darted out or retracted with great agility by the animal, the part which is thrown out being of a black colour, while the remainder or sheathed portion is red.

The teeth are of two sorts, viz. the smaller, which are seated in each jaw, and serve for the catching and retaining the food; and, secondly, the fangs or poisonous teeth, which kill the prey, and are placed without the upper jaw, and are all canini or apprehensores; for since snakes do not chew or bruise their food, but swallow it whole, they have no need of molares or grinders.

Of the first sort of teeth are two rows on each side, viz. five in a row, the inward less than the outward, there being twenty in all. In the upper jaw there are only sixteen, viz. five on each side, placed backward, and six before. These do no harm, which was known of old to mountebanks, who, to give a proof of the efficacy of their antidotes, would suffer themselves to be bitten by Vipers, but first took care to spoil them of their fangs.

The fangs are placed without the upper jaws, towards the fore part of the mouth, not fastened to the maxillæ, as the other teeth, but the two

outmost and largest fangs were fixed to that bone which (if any) may be thought to be the ear-bone: the other fangs, or smaller ones, seemed not fixed to any bone, but rather to muscles and tendons. The fangs were not to be perceived on first opening the mouth, lying couched under a strong membrane or sheath; but so as to make a large rising there on the outside of the smaller teeth of the maxilla; but at pleasure, when alive, the animal can raise them to do execution with, as a cat or lion does its claws. These fangs were hooked and bent, like the tusks of the Babyroussa, but some of the smaller ones were bent at right angles: on each side we meet with about six or seven of these. In all these teeth was a pretty large foramen or hole towards the root of it, and towards the point was a plainly visible large slit, sloping like the cut of a pen; the part from the slit being perfectly hollow; and on pressing gently with the finger on the side of the gum, the poison, which was of a yellowish colour, was readily perceived to issue from the hollow of the tooth through the slit.

The vertebræ, according to the figure of the body, were smallest towards both extremes, and largest in the middle. From the neck to the vent there were as many vertebræ as scales on the belly, viz. 168; but from the vent to the setting on of the rattle were twenty-nine more in number than the scales.

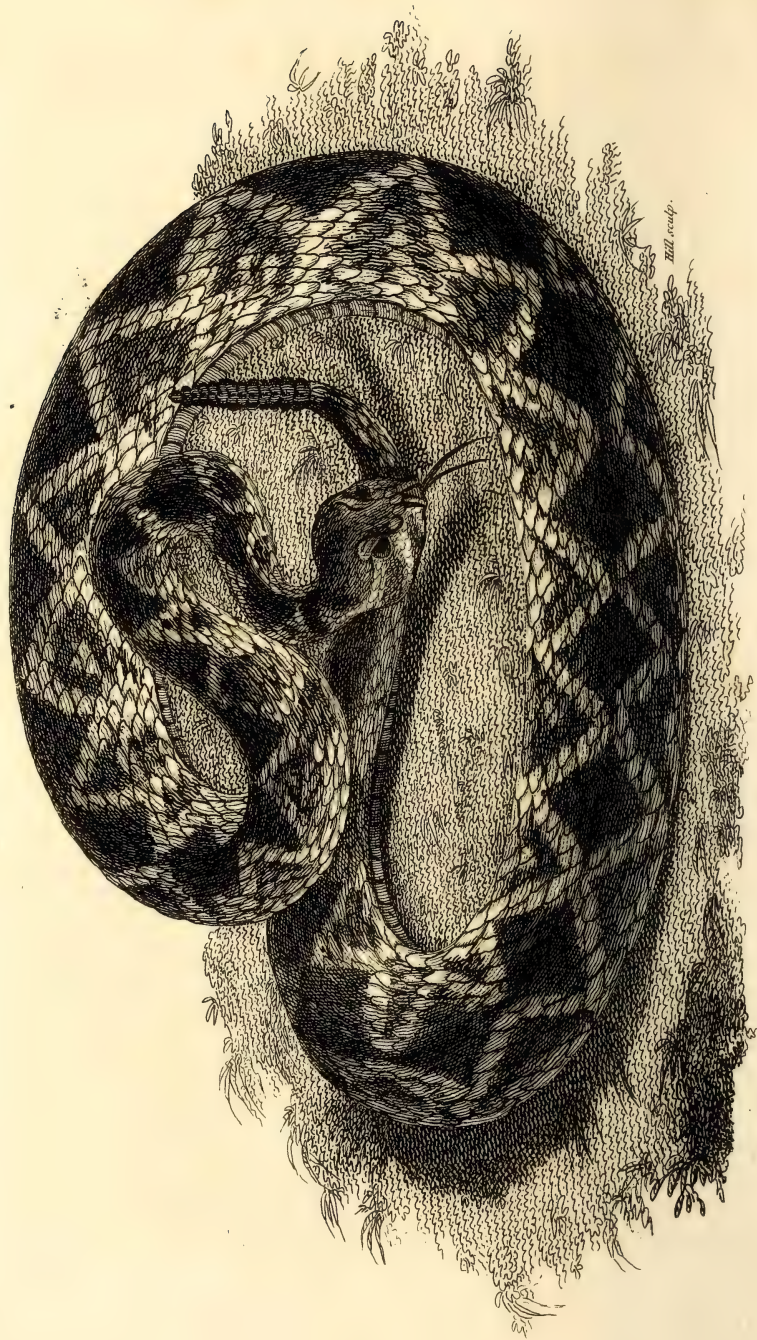
The rattle is well described by Dr. Grew, who

observes that it consists of hollow, hard, dry, and semitransparent bones, nearly of the same size and figure; resembling in some degree the shape of the human os sacrum; for although only the last or terminal one seems to have a rigid epiphysis joined to it, yet have every one of them the like; so that the tip of every uppermost bone runs within two of the bones below it; by which artifice they have not only a moveable coherence, but also make a more multiplied sound: each bone hitting against two others at the same time.

The rattle is placed with the broad part perpendicular to the body, and not horizontal; and the first joint is fastened to the last vertebra of the tail by means of a thick muscle under it, as well as by the membranes which unite it to the skin: all the remaining joints are so many extraneous bodies, as it were, or perfectly unconnected to the tail by any other means than their curious insertions into each other.

The number of joints in the rattle of different individuals is very various, from five to twelve, fifteen, twenty, or even, according to some accounts, as many as forty. The pieces of which it consists are successively formed, each having been once attached to the muscle of the last vertebra of the tail, and driven on by the gradual formation of a young or immature one beneath it; but as it is not known whether these successive formations of new joints in the rattle correspond with the general changes of the skin, and as the

STRIPED RATTLE-SNAKE.



part is also liable from its nature to occasional mutilations, it cannot be considered as a proper test of the animal's age.

The length of the individual dissected by Dr. Tyson, was four feet five inches; the girth of the body in the largest part six inches and a half; that of the neck three inches, and of the extremity of the tail, near the rattle, two inches.

From his description of its colour, it should rather seem to have been the *Crotalus Durissus* or next species, than the present, since he tells us the scales on the back made a curious chequer or dappling by the intermixture of its colours. The number of abdominal scuta was 168. Beyond the vent were two half-scales, and thence nineteen scuta or whole scales; while from thence to the rattle itself were six orders or rows of smaller scales.

STRIPED RATTLE-SNAKE.

Crotalus Durissus. C. fuscus, strius rhombeatis subflavis.

Brown Rattle-Snake, with yellowish rhomboid stripes.

Crotalus Durissus. Lin. Syst. Nat. p. 372.

Abdominal scuta 172, subcaudal 21.

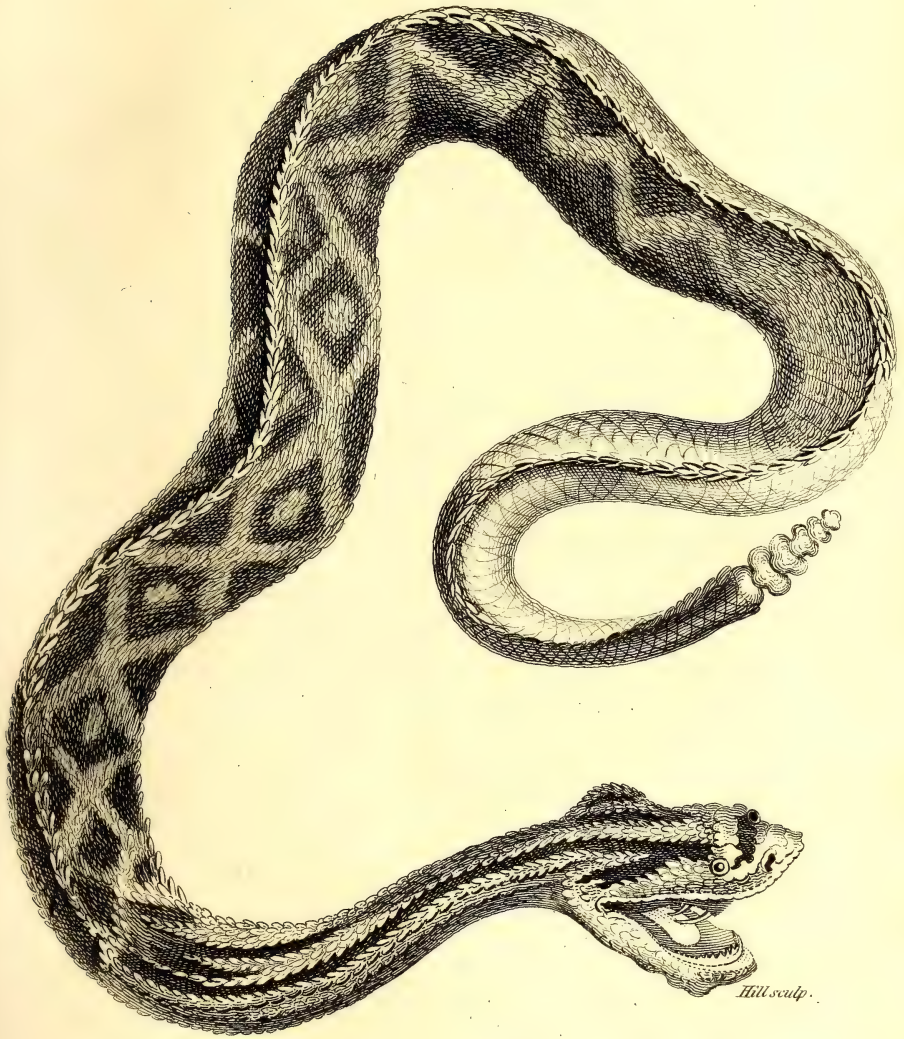
THIS species may, in general, be readily distinguished from the former by the different disposition of its colours, being of a deep brown above, with a very regularly conducted pattern of pale-yellow streaks, so disposed as to form a continued series of large rhombs or lozenges down the back,

the stripes growing somewhat less distinct as they descend on the sides, where they are continued into a less perfect repetition of the dorsal pattern: the neck is marked by a longitudinal streak on each side, and the under parts of the body resemble in colour those of the former species, being of a dusky yellowish brown, with numerous small dark spots and patches. The size and general proportions of the animal resemble those of the former, with which indeed it appears to have been very frequently confounded. It is also a native of the same parts of America, but seems to have been unknown to Catesby, who has not introduced it into his History of Carolina. Its bite, so far as can be ascertained by experiments made with such specimens as have been transported into Europe, appears to be equally fatal* with that of the former species.

* In the spring of the present year a Rattle-Snake of this species, which had been kept many months in confinement, bit a healthy half-grown Rabbet, which was placed in its cage, on the loins: the Rabbet instantly fell down; became quite paralytic in the hind limbs, and soon afterwards in the fore also, and died in the space of twenty-five minutes† from the bite, without any convulsive motions.

† According to the observations of Sir Thomas Callum, bart. in whose presence the experiment was made.

STRIPED RATTLE-SNAKE.
var ?



from Vosmaer.



WOOD RATTLE-SNAKE.

*Heath sculp.*

WOOD RATTLE-SNAKE.

Crotalus Dryinas. C. griseus, subluteo variatus.

Greyish Rattle-Snake, with yellowish variegations.

Crotalus Dryinas. Lin. Syst. Nat. p. 372.

Vipera caudisona Ceilanica. Seb. 2. t. 95. f. 3.

Vipera Orientalis maxima caudisona. Seb. 2. t. 96. f. 1.

Abdominal scuta 165, subcaudal 30.

A GENUINE description of the particular colour of this species, in a living state, seems yet wanting; authors having described it from specimens preserved in spirits, in which, after a certain period, the colours of most serpents are greatly changed and faded. It is said, however, to be of a paler or lighter tinge than the two former species, and to be variegated with yellowish marks on the back: some individuals figured by Seba, and which are generally referred to this animal, are of a rufous or ferruginous tinge, with a cast of yellow accompanied by a few dusky variegations on the upper parts: the rattle is, in these specimens, of much greater length than is usually seen in the preceding kinds, the number in one of them amounting to no less than forty. Seba imagined his specimens to have been natives of Ceylon, and therefore distinguishes them by the title of Oriental Rattle-Snakes; but it is generally supposed that this is a mistaken idea, and that the whole genus is confined to the American continent.

MILIARY RATTLE-SNAKE.

Crotalus Miliarius. C. cinereus, maculis nigris triplici ordine longitudinali, macula rubra inter singulas dorsales.

Grey Rattle-Snake, with a triple row of black spots, and a red spot between each of the dorsal ones.

Crotalus Miliarius. Lin. Syst. Nat. p. 572.

Small Rattle-Snake. *Catesb. Car. 2. pl. 42.*

Abdominal scuta 132, subcaudal 32.

Mr. CATESBY, the first describer of this animal, seems to entertain some doubts whether it really differs from the common rattle-snake, in any other respect than in colour, its prevailing tinge being grey-brown, shaded on the back with red, and marked by large black spots with white indented edges. It appears, however, to be a truly distinct species, differing not only in colour but in the smaller number of its abdominal scuta: there are generally three rows of black dorsal spots, of which the middle range is the largest, and is distinguished by a red spot interposed between each of the black ones, which are also commonly tinged with red on the middle: this is the smallest species of Rattle-Snake yet known, rarely exceeding the length of two feet. In its general habits it resembles the preceding kinds.

BOA. BOA.

Generic Character.

<p><i>Scuta</i> abdominalia & sub-caudalia.</p>		<p><i>Scuta</i> or undivided plates both on the abdomen and beneath the tail.</p>
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CONSTRUCTOR BOA.

Boa Constrictor. *B. griseo-flavescens, catena dorsali castanea, maculis lateralibus subtrigonis.*

Yellowish-grey Boa, with large chesnut-coloured chain-like pattern down the back, and subtrigonal spots on the sides.

Boa Constrictor. *Lin. Syst. Nat. p. 373.*

Serpens Ceilonica spadicea Manballa dicta. *Seb. 2. t. 99. f. 1.*

Serpens excellens ac speciosa Brasiliensis. *Ib. t. 99. f. 2.*

Serpens blanda Ceilonica Polonga dicta. *Ib. t. 101.*

Serpens Americana arborea. *Seb. 1. t. 53.*

Le Devin. *Cepede ovip. 2. p. 338.*

Boa Constrictor. Great Boa. *Nat. Misc. vol. 2. pl. 51.*

Abdominal scuta 240, subcaudal 60.

THE genus Boa is remarkable for the vast and almost unlimited size of some of the principal species, which in India, Africa, and South America, are occasionally found of not less than twenty, thirty, and even thirty-five feet in length, and of a strength so prodigious as to be able to destroy

cattle, deer, &c. by twisting around them in such a manner as to crush them to death by continued pressure*, after which they swallow them in a very gradual manner; and when thus gorged with their prey, become almost torpid with repletion, and if discovered in this state, may without much difficulty be destroyed by shooting or other methods. There is reason to suppose that these gigantic serpents are become less common now than some centuries backwards, and that in proportion as cultivation and population have increased, the larger species of noxious animals have been ex-

* This practice of the larger serpents seems to have been well known to the ancients: thus Lucan, speaking of the monstrous African snakes (which he also represents as furnished with wings), tells us they destroy Oxen, and even Elephants, by writhing around and crushing them to death.

" Vos quoque, qui cunctis innoxia numina terris
Serpitis, aurato nitidi fulgore Dracones,
Pestiferos ardens facit Africa, ducitis altum
Aera cum pennis, armentaque tota secuti
Rumpitis ingentes amplexi verbere tauros.
Nec tutus spatio est Elephas: datis omnia leto:
Nec vobis opus est ad noxia fata veneno."

Ye too, in other climes who harmless rove
In gilded scales, the guardians of the grove,
In horrid Afric's pestilential air
Acquire new natures from the burning glare:
Ride thro' the blaze of noon on sable wing,
Quick on th' affrighted herds with fury spring;
And gathering all your folds in writhings dire,
Bid the huge Ox beneath your crush expire:
Th' enormous Elephant by force can slay,
And need no poison to secure your prey.

The tale of Laocoon in Virgil might be also adduced as an example of this particular.



Will. Swell.

CONSTRUCTOR BOA.

pelled from the haunts of mankind, and driven into more distant and uncultivated tracts: they are still, however, occasionally seen, and sometimes approach the plantations and gardens of the districts nearest to their residence.

Of all the larger Boæ the most conspicuous is the Boa Constrictor, which is at once preeminent from superiority of size and beauty of colours: in this respect indeed it appears to be subject to considerable variation from age, sex, and climate, but may be distinguished in every state from the rest of its tribe by the peculiar pattern or disposition of its variegations. The ground-colour of the whole animal, in the younger specimens, is a yellowish grey, and some times even a bright yellow, on which is disposed along the whole length of the back a series of large, chain-like, reddish-brown, and sometimes perfectly red variegations, leaving large open oval spaces of the ground colour at regular intervals: the largest or principal marks composing the chain-like pattern above mentioned are of a squarish form, accompanied on their exterior sides by large triangular spots, with their points directed downwards: between these larger marks are disposed many smaller ones of uncertain forms, and more or less numerous in different parts: the ground-colour itself is also scattered over by a great many small specks of the same colour with the variegations: the exterior edges of all the larger spots and markings are commonly blackish, or of a much deeper cast than the middle part, and the ground-colour immediately accompany-

ing the outward edges of the spots is, on the contrary, lighter than on other parts, or even whitish, thus constituting a general richness of pattern, of which nothing but an actual view of a highly-coloured specimen of the animal itself can convey a complete idea. In the larger specimens the yellow tinge is often lost in an uniform grey cast, and the red tinge of the variegations sinks into a deep chesnut; and in some the general regularity of the pattern before described is disturbed by a kind of confluent appearance: the head is always marked above by a large longitudinal dark band, and by a narrower lateral band passing across the eyes towards the neck.

The Boa Constrictor is a native of Africa, India, the larger Indian islands, and South America, where it chiefly resides in the most retired situations in woody and marshy regions.

It was, in all probability, an enormous specimen of this very serpent that once diffused so violent a terror amongst the most valiant of mankind, and threw a whole Roman army into dismay. Historians relate this surprising event in terms of considerable luxuriance. Valerius Maximus thus mentions it from Livy, in one of the lost books of whose history it was related more at large.

“And since we are on the subject of uncommon phenomena, we may here mention the serpent so eloquently and accurately recorded by Livy; who says, that near the river Bagrada in Africa, a snake was seen of so enormous a magni-



CONSTRUCTOR BOA.

Henderson.

tude as to prevent the army of Attilius Regulus from the use of the river ; and after snatching up several soldiers with its enormous mouth, and devouring them, and killing several more by striking and squeezing them with the spires of its tail, was at length destroyed by assailing it with all the force of military engines and showers of stones, after it had withstood the attack of their spears and darts : that it was regarded by the whole army as a more formidable enemy than even Carthage itself ; and that the whole adjacent region being tainted with the pestilential effluvia proceeding from its remains, and the waters with its blood, the Roman army was obliged to remove its station : he also adds, that the skin of the monster, measuring 120 feet in length, was sent to Rome as a trophy.”

The learned Frienshemius, in his *Supplementa Liviana*, has attempted a more ample and circumstantial narrative of the same event, and it cannot be unacceptable to the reader to receive a quotation from an author who has so happily imitated the manner of the great historian.

“ Interea M. Regulus, &c.”

“ In the mean time Regulus, every where victorious, led his army into a region watered by the river Bagrada, near which an unlooked-for misfortune awaited them, and at once affected the Roman camp with considerable loss, and with apprehensions still more terrible ; for a serpent of prodigious size attacked the soldiers who were sent for water, and while they were overwhelmed

with terror, and unequal to the conflict, engulfed several of them in its enormous mouth, and killed others by writhing round them with its spires, and bruising them with the strokes of its tail: and some were even destroyed by the pestilential effluvia proceeding from its breath: it caused so much trouble to Regulus, that he found it necessary to contest the possession of the river with it by employing the whole force of his army; during which a considerable number of soldiers were lost, while the serpent could neither be vanquished nor wounded; the strong armour of its scales easily repelling the force of all the weapons that were directed against it; upon which recourse was had to battering engines, with which the animal was attacked in the manner of a fortified tower, and was thus at length overpowered. Several discharges were made against it without success, till its back being broken by an immense stone, the formidable monster began to lose its powers, and was yet with difficulty destroyed; after having diffused such a horror among the army, that they confessed they would rather attack Carthage itself than such another monster: nor could the camp continue any longer in the same station, but was obliged to fly; the water and the whole adjacent region being tainted with the pestiferous effluvia. A most mortifying humiliation to human pride! Here at least was an instance of a whole Roman army, under the command of Regulus, and universally victorious both by sea and land, opposed by a single snake, which

conflicted with it when living, and even when dead obliged it to depart. The proconsul, therefore, thought it no diminution to his dignity to send the spoils of such an enemy to Rome, and to confess at once the greatness of his victory and his terror by this public memorial: for he caused the skin of the snake to be taken off and sent to the city; which is said to have measured 120 feet: it was suspended in a temple, and remained till the time of the Numantine war."

Of the two figures selected for the illustration of this species, one represents the animal in its most regular state of variegation, the other with the less regular or confluent pattern.

SPOTTED BOA.

Boa Scytale. *B. cinerea maculis dorsalibus magnis orbiculatis nigris, lateralibus annulatis disco albo.*

Cinereous Boa, with large orbicular black dorsal spots, and annulated lateral ones, with white centres.

Boa Scytale. *Lin. Syst. Nat. p. 274. Boddaert Nov. Act. Cæs. 7. p. 17. Scheuchzer Phys. Sacr. t. 737. f. 1.*

Abdominal scuta 250, subcaudal 70.

THE spotted Boa is sometimes scarcely inferior in size to the Constrictor, and is of similar manners, destroying, like that animal, goats, sheep, deer, &c. it is described as being generally of a grey or glaucous colour, marked with large orbicular black spots on the back, and with smaller

ones of similar form, but with white centres, on the sides, while on the abdomen are scattered several oblong spots and marks, interspersed with smaller specks and variegations. It is a native of several parts of South America, and, like other large snakes, is occasionally eaten by the Indians.

RINGED BOA.

Boa Cenchris. *B. rufescens, annulis magnis dorsalibus nigrican-*
tibus, maculis reniformibus lateralibus fuscis medio albidis.

Rufescent Boa, with large dusky dorsal rings, and blackish kidney-shaped lateral spots with white centres.

Boa Cenchris. *Lin. Syst. Nat. p. 274.*

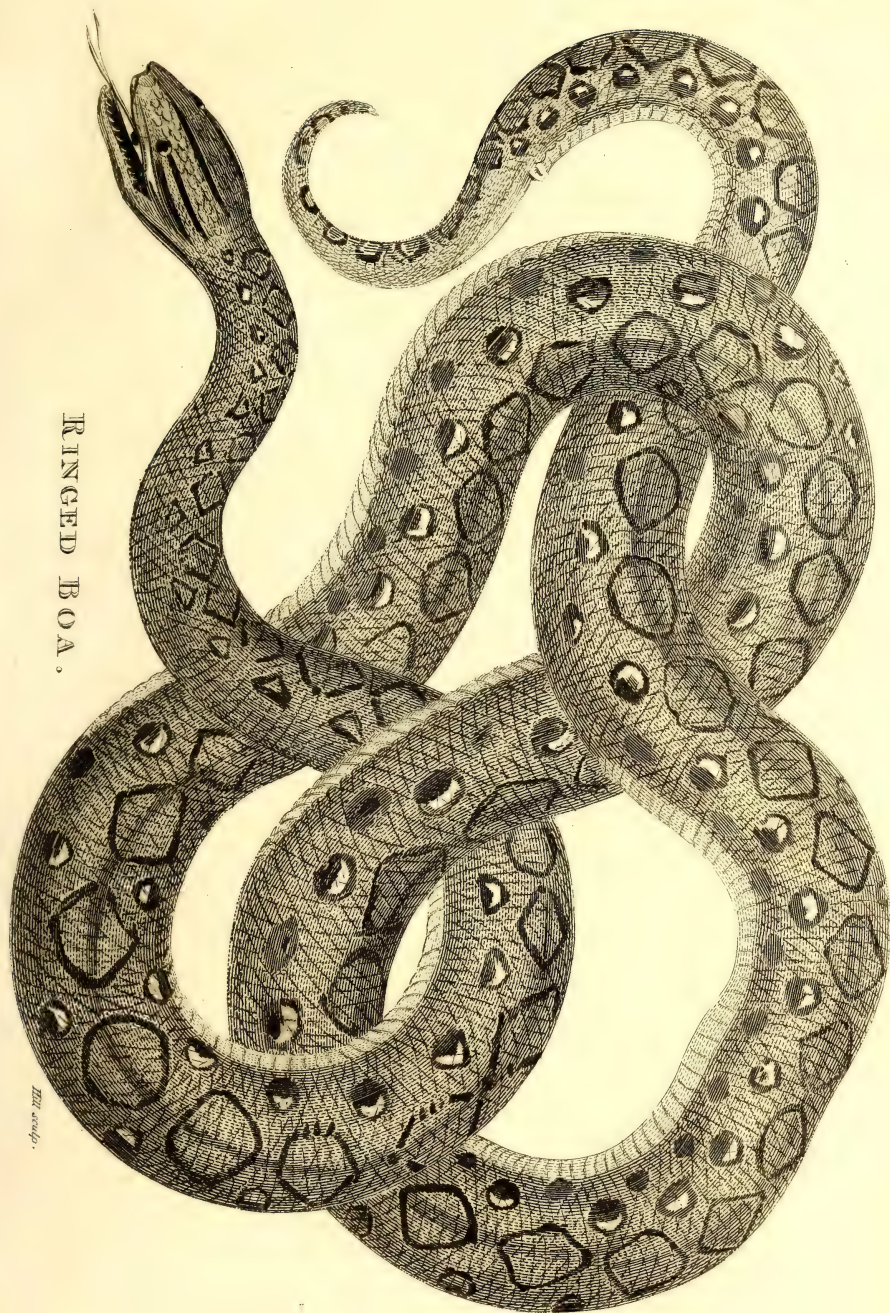
Tamacuilla Huilia, seu Serpens Oculea Mexicana fæmina.

Seb. 2. t. 98.

Abdominal scuta 265, subcaudal scuta 57.

THIS also grows to a large size, though not equal to either of the former species, from which, as well as from most others, it may be easily distinguished by the regular distribution of its colours; the general cast being ferruginous, darkest on the back, where it is marked by a continued series of very large blackish circles from head to tail; while along the sides are interspersed several kidney-shaped blackish spots with white centres: the head is a lengthened form, and is marked by a black longitudinal and two lateral bands. This animal is a native of South America, and is extremely well figured in the work of Seba. In the British and Leverian Museums are specimens preserved in spirits.

RINGED BOA.



The body.

WATER BOA

Boa Enydris. *B. colore griseo variegata.* Boddaert Nov. Act.

Cæs. 7. p. 18.

Boa with grey variegations.

Boa Enydris. *Lin. Syst. Nat. p. 274.*

Abdominal scuta 270, subcaudal 105.

THIS species, according to Linnæus, is variegated with different shades of grey; the teeth in the lower jaw are longer than usual in this genus; the number of abdominal scuta is 270, and of the subcaudal ones 105. Linnæus described it from a specimen in the collection of Baron Degeer. It is greatly allied in general appearance to the *Hor-tulana*, having a compressed body, and a nearly similar pattern.

 BROWN BOA.

Boa Ophryas. *B. corpore fusco.*

Boa with brown body.

Boa Ophryas. *Lin. Syst. Nat. p. 274.*

Abdominal scuta 281, subcauda 84.

MENTIONED by Linnæus from a specimen in the Museum of Degeer: has the general habit of the *B. Constrictor*, but is of a dark or dusky colour, and has 281 abdominal and 84 subcaudal scuta.

CANINE BOA.

Boa Canina. *B. viridis, fasciis dorsalibus transversis undulatis albis.*

Green Boa, with transverse, undulated, white dorsal bands.

Boa Canina. *Lin. Syst. Nat. p. 373. Mus. Ad. Frid. p. 39. t. 3.*

Serpens Bojobi Brasiliensis, &c. Seb. 2. t. 96. and var. Serpens Bojobi Ceilanica. t. 81.

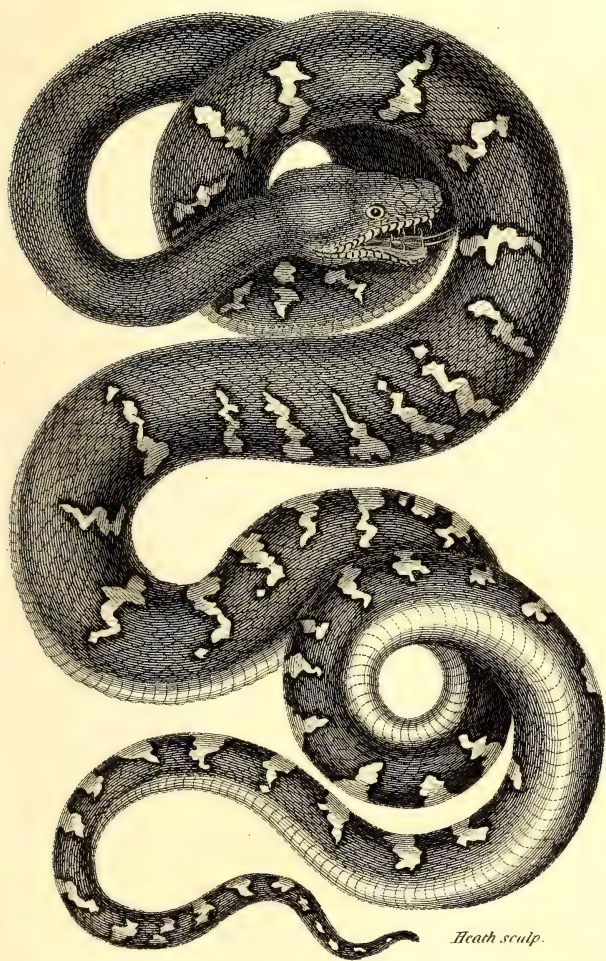
Abdominal scuta 203, subcaudal 77.

A HIGHLY beautiful snake; measuring about four feet in length, and being of moderate size or thickness in proportion: the head is large, and shaped like that of a dog: the colour of the whole animal on the upper parts is a most beautiful saxon-green, with several short, undulating, transverse white bars down the back, the edges of which are of a deeper or stronger green than the ground-colour of the body: the under or abdominal part is white. This species is a native of South America. In the British Museum is an elegant specimen.

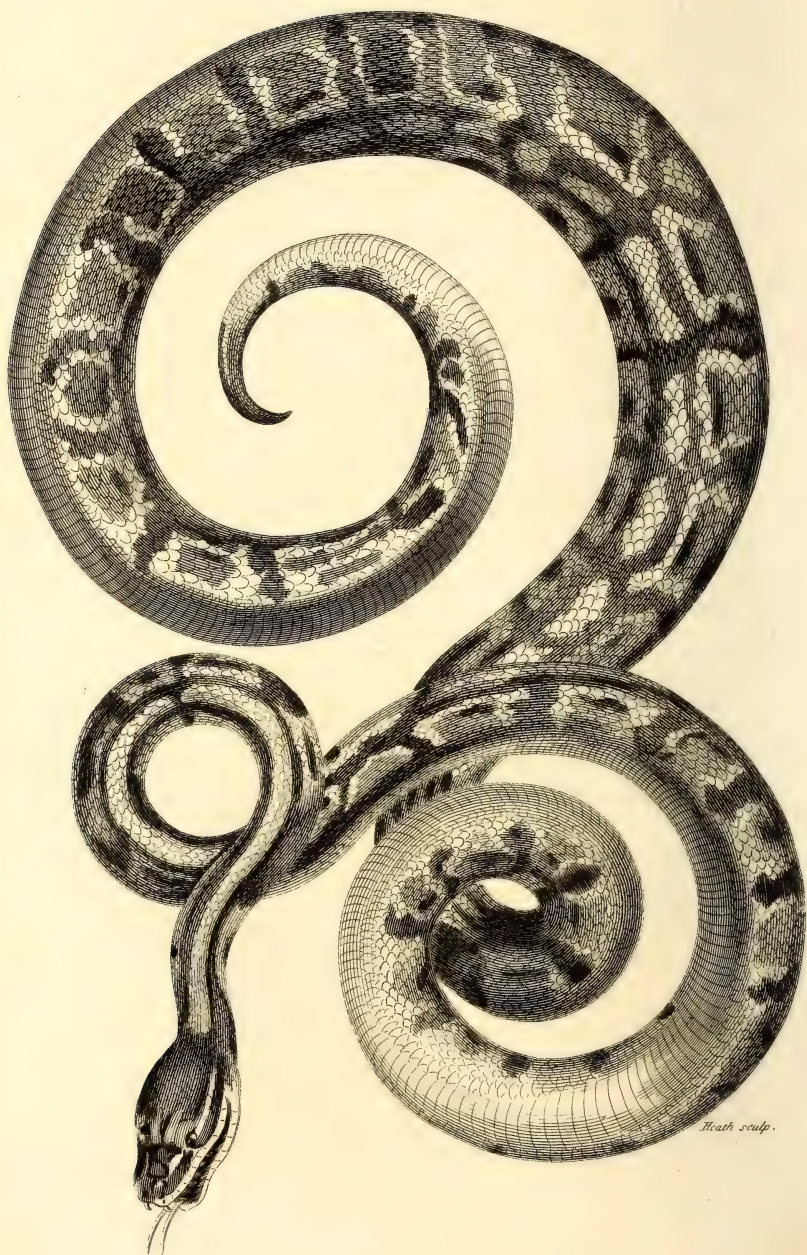
VAR. ?

SEBA describes and figures a remarkable variety of this animal, in which the ground-colour is bright orange, the dorsal bands pale yellow edged with red, and the abdomen pale yellow. It is a native of the East Indies, differing merely in colour from the former.

CANINE BOA.



ROYAL BOA.



ROYAL BOA.

Boa Regia. *B. alba, collo longitudinaliter fasciato, corpore fusco griseoque, vel aurantio roseoque variato.*

White Boa, with longitudinally striped neck, and body variegated either with brown and grey, or orange and rose-colour.

Serpens *Phyticus* Africanus prodigiosus, ab indigenis divino honore cultus. *Seb. 1. t. 62. f. 1.*

Serpens Arabica Brasiliensibus *Ibiboboca* & *Boiguau* dictis. *Seb. 2. t. 102.*

THIS species, which does not appear to have been described by any author except Seba, is in the form of its head, and the general shape of the body, most allied to the *Canina* and *Phrygia*. In its colour it appears to vary, the ground-colour being white, but the variegations sometimes dusky or chesnut, and sometimes of a most elegant orange-red, accompanied by a tinge of blossom-colour on the lighter parts of the pattern: the top of the head is filled by a large patch, from which run two long parallel stripes to a considerable distance on each side the neck, leaving a wider stripe of the ground-colour along the upper part, and which afterwards ceasing, forms a part of the general variegation, which consists of a large and somewhat chain-like dorsal band, running down on each side at moderately distant intervals, into obtuse processes or sinuations regularly bordered by the white ground-colour, the intervening lateral spaces being much lighter, and each marked by a dusky patch on the upper part: the under parts of the body and tail are white:

the head is covered in front with large scales: the tail is extremely short, and tapers pretty suddenly.

EMBROIDERED BOA.

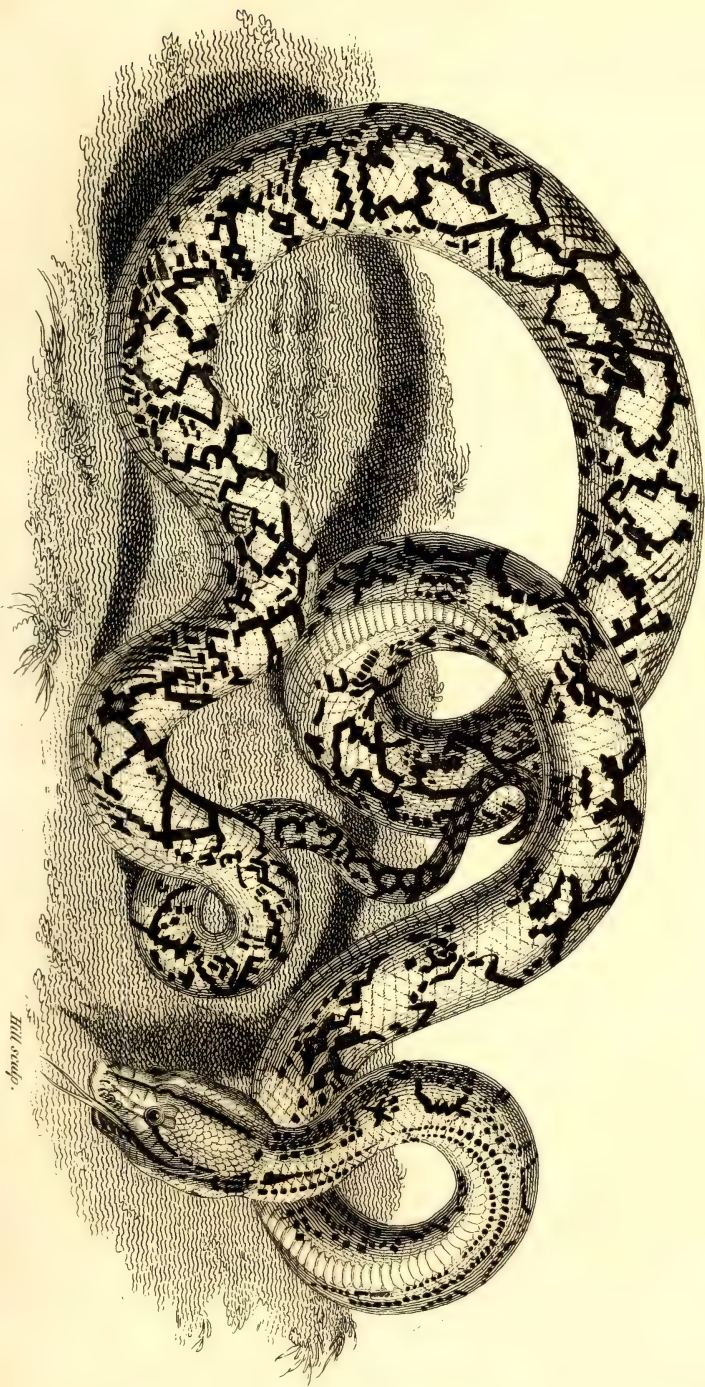
Boa Phrygia. *B. alba, dorso subgriseo, corpore nigro elegantissime limbato.*

White Boa, with a greyish cast on the back; the body most elegantly marked with black lace-like variegations.

Serpens Phyticus Orientalis Gerende dictus. Seb. 1. t. 62. f. 2.

AMONG the whole Serpent tribe it may be doubted whether there exists a species more truly elegant than the present. Its general size seems to be nearly that of the Boa canina, but its length is rather greater in proportion: the ground-colour of the whole animal is white, with a very slight cast of yellowish-brown on the back, while along the whole upper part is disposed a continued series of black variegations, so conducted as to bear a striking resemblance to an embroidery in needlework: the head is of the same form with that of the Boa canina, and marked by three narrow black streaks, which, running along the top of the head and the cheeks, as shewn in the figure, join with the embroidered pattern of the back: the lower surface is entirely white: it seems singular that so remarkable a species should not have been attended to by Linnæus. It is, according to Seba, a native of the East Indies: he adds, that it is called by the title of *Gerende*, and that in some

EMBROIDERED BOA.

*Hill sculp.*

places divine honours are paid to it. In the Leverian Museum are fine specimens of this snake, one of which appears to have swallowed some species of Oppossum of about the size of a common rat, the head of which is purposely drawn out from an opening made in the abdomen. In the Museum of the late Dr. William Hunter is also a very beautiful specimen. As this species can never be mistaken for any other yet known, it is the less necessary to particularize the exact number of its abdominal and subcaudal scuta, which, in specimens preserved in covered glasses, is not very easy to investigate: the only circumstance in which it appears to vary is in the intensity of colour in the embroidered pattern, which in some is black, and in others deep chesnut.

VAR. ?

SEBA describes and figures two snakes which appear to me to be varieties of this species: one of a purplish-ferruginous, the other of a yellow-ferruginous colour: the abdomen in the former pale purple, in the latter yellowish white: the general variegations the same as in the first described kind: the purplish variety is said to be from Japan, the other from New Spain. See *Seba*, vol. 2. pl. 79 and 80. Yet, if we may trust to the accuracy of the engraving, they should seem rather to belong to the genus *Coluber*, the tails in both being represented with divided squamæ; but this may perhaps be an inaccuracy on the part of the artist.

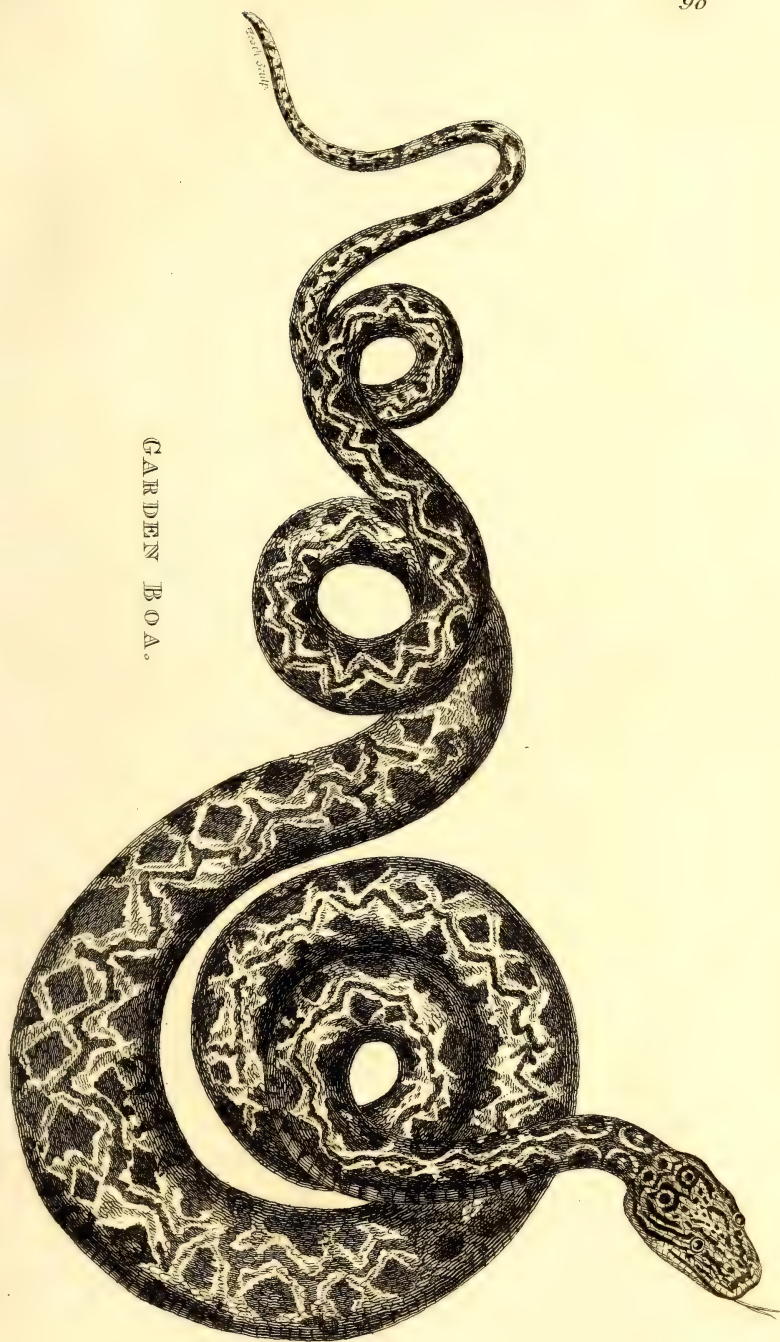
GARDEN BOA.

Boa Hortulana. *B. griseo-flavescens fusco variegata, capite lim-
bato, corpore subcompresso, maculis lateralibus cuneiformibus.*

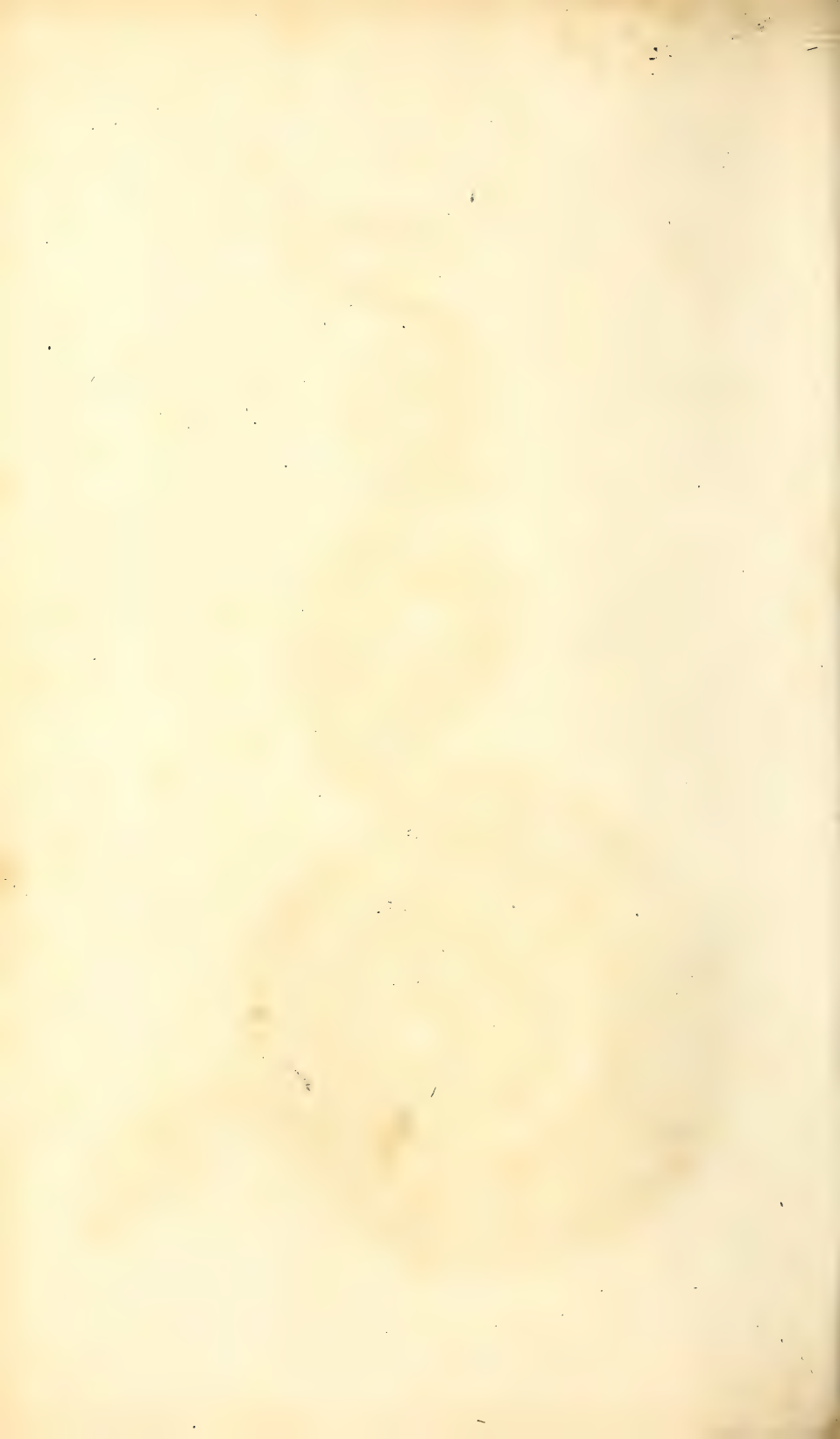
Yellowish-grey Boa, with brown variegations; those on the head resembling lace: the body subcompressed, and the sides marked by wedge-shaped spots.

Boa Hortulana. *Lin. Syst. Nat. p. 274. Mus. Ad. Frid. p. 37.*
Abdominal scuta 290, subcaudal 123.

THIS very elegant serpent, which is of moderate size, measuring only a few feet in length, and being of a slender form, has obtained its Linnæan title from the singular pattern of the variegations on the head, which are of a blackish brown on a pale ferruginous or yellowish ground, and in some degree represent the form of a parterre in an old-fashioned garden: the variegations on the body are of similar colour, and are disposed into large circular, and sometimes angular patches on the sides, the centres of some being open, and of others marked by an oblong spot: besides these are interspersed others of smaller size and of different forms: the abdomen is commonly yellowish, with dusky specks and patches: the ground-colour of the whole snake is sometimes pale violet, and the variegations dark purplish brown, but in all its varieties this species may be easily distinguished by the rich embroidered appearance of the pattern, and more particularly by that on the top of the head: the head is also rather broader, and the neck more slender in proportion than in most other Boæ, the body slightly compressed, and the



GARDEN BOA.



tail slender. It is a native of South America. Seba figures what appears to be a variety of this species, of a sea-green colour above, with deep chesnut variegations, and pale yellow beneath, with reddish spots.

It is remarkable that Linnæus, in the Museum Adolphi Friderici, appears to describe the *Boa hortulana* as a species of *Coluber*, having the habit or general aspect of a Boa.

RAT BOA.

Boa Murina. *B. grisea maculis rotundatis nigris, lateralibus albidò-ocellatis.*

Grey Boa, with round black spots, those on the sides ocellated with white.

Boa murina. *Lin. Syst. Nat. p. 274.*

Serpens testudinea Americana, murium insidiator. *Seb. 1. t. 29.*

Abdominal scuta 254, subcaudal 65.

THIS is a middle-sized species, measuring about two feet and a half or three feet in length, and being of a moderately thick form: the colour of the whole upper part is grey or blueish-brown, with several moderately large round black spots dispersed in a somewhat irregular manner along the back and sides; those on the sides being marked with a white patch, so as to appear ocellated: some smaller spots of different forms are also interspersed: the abdomen is of a yellowish white or pale colour, with a few scattered dusky spots: the head is marked on each side by two

longitudinal black stripes: this species is said to feed principally on rats, and to be found in South America.

CROTALINE BOA.

Boa maculis nigris rhombeatis dorsalibus, cauda subtus serie quaduplici squamarum terminata.

Boa with black rhomboid dorsal spots, and tail terminated beneath by four rows of scales.

Crotalus mutus. *Lin. Syst. Nat. p. 373.*

THIS snake Linnæus was induced to place in the genus *Crotalus*, from its habit, and from a certain peculiar disposition of the scales at the tip of the tail, which are distributed into four series, seeming as it were to supply the place of the rattle in the genuine *Crotali*; but since the particular organ itself, which so strikingly distinguishes those serpents, is wanting, it, of course, cannot properly belong to the same genus: it is a native of Surinam, and is a large species, marked on the back by a chain of black rhomboid spots, and is furnished with very large and strong fangs.

FASCIATED BOA.



FASCIATED BOA.

Boa Fasciata. *B. flava, corpore subtriangulo cæruleo annulato.*

Yellow Boa; with subtriangular body annulated with blue.

Bungarum Pamah. *Russ. Ind. Serp. p. 3. pl. 3.*

Abdominal scuta 233, subcaudal 36.

IT is to Dr. Patrick Russel that we owe the knowledge of this remarkable species, which is a native of India, and is said to be most frequent in the country of Bengal. It is of a yellow colour, marked with pretty numerous dusky-blue transverse bands, continued, at equal distances, throughout the whole length of the animal, each band completely investing or surrounding the body, but being rather paler beneath than above: the head is rather small than large, and covered in front with large scales: the body is of a trigonal form, the sides sloping very considerably: along the ridge of the back runs a continued series of hexagonal scales, those on the rest of the body being of the usual subovate form: the scuta or lamellæ of the under parts are very broad, and finely ciliated on their margins: the length of the whole animal is something more than five feet, the diameter, in the thickest part, being nearly five inches: the length of the tail five inches only, and its termination rather obtuse.

This snake is among the number of poisonous species, and its bite is considered by the Indians as inevitably fatal. A specimen was brought to Dr. Russel in the month of November, 1788, in

an apparently weak and languid state, having been bruised in taking. Being set at liberty in a room, it crept slowly towards an obscure corner, where a chicken being presented to him he took no particular notice of it, and even suffered the bird to stand on his back. As he shewed no disposition to bite, his jaws were forcibly opened, and the thigh of the chicken being placed between them, the mouth was so closed over it as to oblige the fangs to act. The bird, when disengaged, shewed immediate symptoms of poison, and after several ineffectual efforts to rise, rested with the beak on the ground, the head being seized with trembling. In the space of twenty minutes it lay down on one side, and convulsions soon supervening, it expired within twenty-six minutes from the bite. This was the only experiment made; the snake itself dying in the course of the next day; but from the languid state in which it appeared, and the effect of its bite on the chicken, it may be concluded that, when in full vigour, it must be an animal of a highly dangerous nature. Dr. Russel observes, that the fangs are very short for the size of the snake, and that two are visible on each side.



VIPERINE BOA.

Heath sculp.

VIPERINE BOA.

Boa Viperina. *B. grisea, fascia dorsali undulata nigra albido marginata, lateribus nigro maculatis.*

Grey Boa, with black undulating dorsal band edged with white, and sides spotted with black.

Padain Cootoo. *Russ. Ind. Serp. p. 5. t. 4.*

Abdominal scuta 209, subcaudal 19.

THIS also is an Indian species, first described in the work of Dr. Russel. It is about a foot and half in length, and of a moderately deep brown colour, the back being marked throughout the whole length by a broad undulating black band, with a narrow yellowish white margin, while along the sides runs a row of somewhat irregular roundish black spots: the under part of the animal is of a pearl-colour. The head is hardly broader than the neck, oblong, roundish, depressed, subtruncate, and covered with small scales: the teeth are small and numerous, and as there is a marginal row in the upper jaw, there are of course no fangs: the trunk or body is round, of nearly equal thickness, and coated with small, orbicular, close-set, carinated scales: the tail is only an inch and half in length, and is thick, tapering to a sharp point: the vent is longitudinal: and the scuta very short, scarce extending from side to side more than a third part of the diameter of the abdomen.

This snake, Dr. Russel informs us, is said to produce by its bite a slow wasting of the fingers and toes, similar to what happens in some leprous

cases. A living specimen, however, which he obtained in Dec. 1788, from Ganjam, enabled him to make some experiments with it on chickens; but though it arrived to excellent order, and bit ferociously, the bite was followed by no symptoms of poison.

LINEATED BOA.

Boa Lineata. *B. atrocærulea lineis transversis arcuatis albopunctatis, abdomine albido.*

Blackish-blue Boa, with white-dotted transverse arcuated lines, and whitish abdomen.

Geedi Paragoodoo. *Russ. Ind. Ser. p. 1. t. 1.*

Abdominal scuta 209, subcaudal 47.

THE *Geedi Paragoodoo* is of a slender form, with the general appearance of a *Coluber* rather than a Boa. It is of an extremely dark blue colour, so as to appear almost black in certain lights, and is marked throughout the whole length of the upper part by several transverse curved and dotted white lines at somewhat unequal distances, and varying in number in different individuals from about forty-two to fifty: they are so disposed as almost to represent so many large spotted circles, if viewed from above: the sides of the body, near the scuta, are dun-coloured, and the whole range of scuta, both abdominal and subcaudal, yellowish-white: the head is covered with large scales; the body with small ovate ones, and down the back runs a row of hexagonal scales: the tail is about

three inches and a half long, and tapers to a slender point.

This snake is not uncommon at *Vizagapatam*, as well as at *Boni*, &c. and some young ones were sent to Dr. Russel from *Masulapatam*, under the name of *Cobra Monil*. The natives of India, who generally exaggerate the noxious character of their serpents, assert that the bite of this animal produces immediate death. The experiments of Dr. Russel, however, prove that it is seldom fatal to chickens in less than half an hour, and to dogs in less than an hour and ten minutes. Its poison was also observed to cause less violent convulsions in the animals infected by it than that of the *Cobra de Capello* and another highly poisonous Indian snake called *Katuka Rekula Poda*; but produced a greater degree of stupor.

On the first of August, 1788, a snake of this species was received by Dr. R. from *Bimlipatam*, after a journey of seven hours, in so languid a state that it was with much difficulty made to bite a chicken on the breast: a little speck of blood was visible on the skin of the chicken, but without any mark of the fangs having acted; notwithstanding which, in about twenty-five minutes the bird began to droop, and in a few minutes more, growing rapidly worse, expired, without any considerable convulsion, in about forty minutes from the bite.

At the distance of five days, the same snake was found in high vigour and beauty, having in that interval cast its skin; and a chicken bitten on

the pinion was soon seized with apparent stupor, though it continued to walk; but in ten minutes it was unable to stand, and within a quarter of an hour lay along the ground, as if asleep: in twenty minutes it made several ineffectual efforts to rise; was soon afterwards faintly convulsed, and at the end of the half hour expired.

A *Geedi Paragoodoo* which had been caught at *Casem Cottah* the day before, was made to bite a large, stout dog on the thigh near the groin: it held fast for more than twenty seconds; but the fangs seemed to have penetrated no deeper than the skin, there being barely the appearance of blood; and some of the poison was found about the supposed place of puncture. The dog, when first wounded, howled much, but on being set at liberty, walked about without any symptoms of poison: in ten minutes he drew up the wounded thigh, still continuing on his legs: but in a quarter of an hour he couched and howled, and the thigh became more paralytic, though he was still able to raise himself: in twenty-five minutes both thighs were observed to be paralytic: in the course of the second hour he grew manifestly disordered; became torpid, and lay panting on his side; and at the end of the second hour expired, without any remarkable appearance of convulsions. The part bitten, being examined about four hours after death, was observed to be scarcely swelled or discoloured; a circumstance different from what is commonly observed in the bites of other poisonous serpents.

Another dog, of much smaller size, bitten by the same snake, expired in one hour and ten minutes; having for the last ten minutes been affected with strong convulsions. In this case about a quarter of an hour elapsed before the animal shewed symptoms of being infected; but towards the end of the hour both the hind legs were become paralytic.

It appears, therefore, that this species of Boa is of a highly poisonous nature.

HORATTA BOA.

Boa Horatta. *B. atrofusca, fascia utrinque laterali undulata maculisque spinalibus flavis.*

Dark-brown Boa, with a waving yellow band on each side, and a row of dorsal spots.

Horatta Pam. *Russ. Ind. Serp. p. 2. t. 2.*

Abdominal scuta 150, subcaudal 25.

THIS is a small species, measuring only about fifteen inches in length. Its colour is a dark brown, with a row of spots on the ridge of the back, from the neck to the end of the tail, varying a little in size and figure, but all of a dull yellowish colour edged with black: along each side runs a conspicuous waving fillet of the same colour, and on the head are four remarkable dark spots, the largest of which bears some resemblance to the shape of a horse-shoe: the scuta are yellowish-white, and all the abdominal ones are marked with three or four dusky spots: the head is rather small

than large, and is entirely covered with small carinated scales; the body with somewhat larger ones: the tail tapers suddenly, and is an inch and half in length. Specimens of different sizes were found to vary very little in colour, still less in spots, and very little in the number of scuta. The fangs or poisoning organs of this snake show it to be noxious; but in what degree could not be ascertained by Dr. Russel, who could not meet with a living subject to make the necessary experiments with. It is reported, however, to be one of the most fatal of serpents.

SIAMESE BOA.

Boa Hipnale. *B. flava, supra maculis magnis irregularibus subtransversis albis fusco-marginatis fasciata.*

Yellow Boa, fasciated above by large irregular subtransverse white spots with brown edges.

Serpens, s. Vipera Siamensis perelegans. *Seb. 1. t. 34.*

Abdominal scuta 179, subcaudal 120.

A SMALL species, but very long in proportion to its breadth; the circumference of the body being scarce more than an inch and half, and the length from two to three feet: the head shaped like that of the Boa canina: the colour of the whole animal pale yellow above, with pretty numerous transverse broken bars of white, with black or deep brown edges: the abdomen yellow. This species is said to be a native of the East Indies, and particularly of the kingdom of Siam.

HOG-NOSED BOA.

Boa Contortrix. *B. grisea, fusco maculata, corpore crasso brevi, naso simo.*

Grey Boa, spotted with black, with short thick body, and turned-up nose.

Hog-nosed Snake. *Catesb. Car. 2. pl. 56.*

Boa Contortrix. *Lin. Syst. Nat. p. 373.*

Abdominal scuta 150, subcaudal 40.

A SMALL species, seldom exceeding the length of about fifteen inches: head large, with the cheeks swelling out like those of vipers; the nose turning up, like that of a hog: body very thick towards the head: colour pale brown, with several large black spots or patches disposed along the back and sides: towards the lower part of the back the spots form a kind of black bars over that part, the ground-colour between them being yellowish: the abdomen is of a dusky white with small blackish spots. This species is a native of North America, and is of a poisonous nature: it is slow in its motions, and has a malevolent aspect: the tail is nearly a third of the length of the whole animal.

PALPEBRAL BOA.

Boa Palpebrosa. *B. Albida, glauco fasciata, palpebris extantibus.*
Whitish Boa, obscurely fasciated with grey, with prominent eyelids.

Schlingende Natter. *Merrem Beytr. Zur. Naturg. 2. p. 20. t. 3.*
Abdominal scuta 112, subcaudal 51,

LENGTH about fifteen inches: head rather large, and covered in front with large scales: eyebrows remarkably prominent: body thick in proportion to its length: colour pearly grey above, with obscure transverse dusky or blueish undulations: beneath pale yellow-brown, with a small transverse oval black spot at the edge of every abdominal scutum, and a middle range of similar spots from the vent to the end of the tail, the extremity of which, for about the length of half an inch, is furnished with divided scales: native country unknown: described by Mr. Merrem. This snake I have arranged among the Boæ rather than the Colubri, on account of the vast predominancy of the *Scuta* over the *Squamæ* on the under surface of the tail,

ANNULATED BOA.

Boa Annulata. *B. subferruginea, maculis dorsalibus orbiculatis nigris annulo inclusis, lateralibus reniformibus ocellatis, abdomine fusco undulato.*

Subferruginous Boa, with black orbicular dorsal spots included in rings, reniform ocellated lateral spots, and abdomen undulated with dusky variegations.

Mer. Surin. t. 5.

THIS is rather a small species, measuring about two feet in length: the head is rather large, as in the *Boa hortulana* and *Enydria*, to which this animal is considerably allied, in its general appearance, but the back is marked with moderately large round black spots almost encircled by a narrow zone of the same colour, including in consequence an interior circle of the ground-colour, which is yellow ferruginous: along the sides runs a row of large reniform black spots, accompanied by a small round one between each: the abdomen, which is cinereous, is variegated by dusky undulations and spots in a somewhat transverse direction.

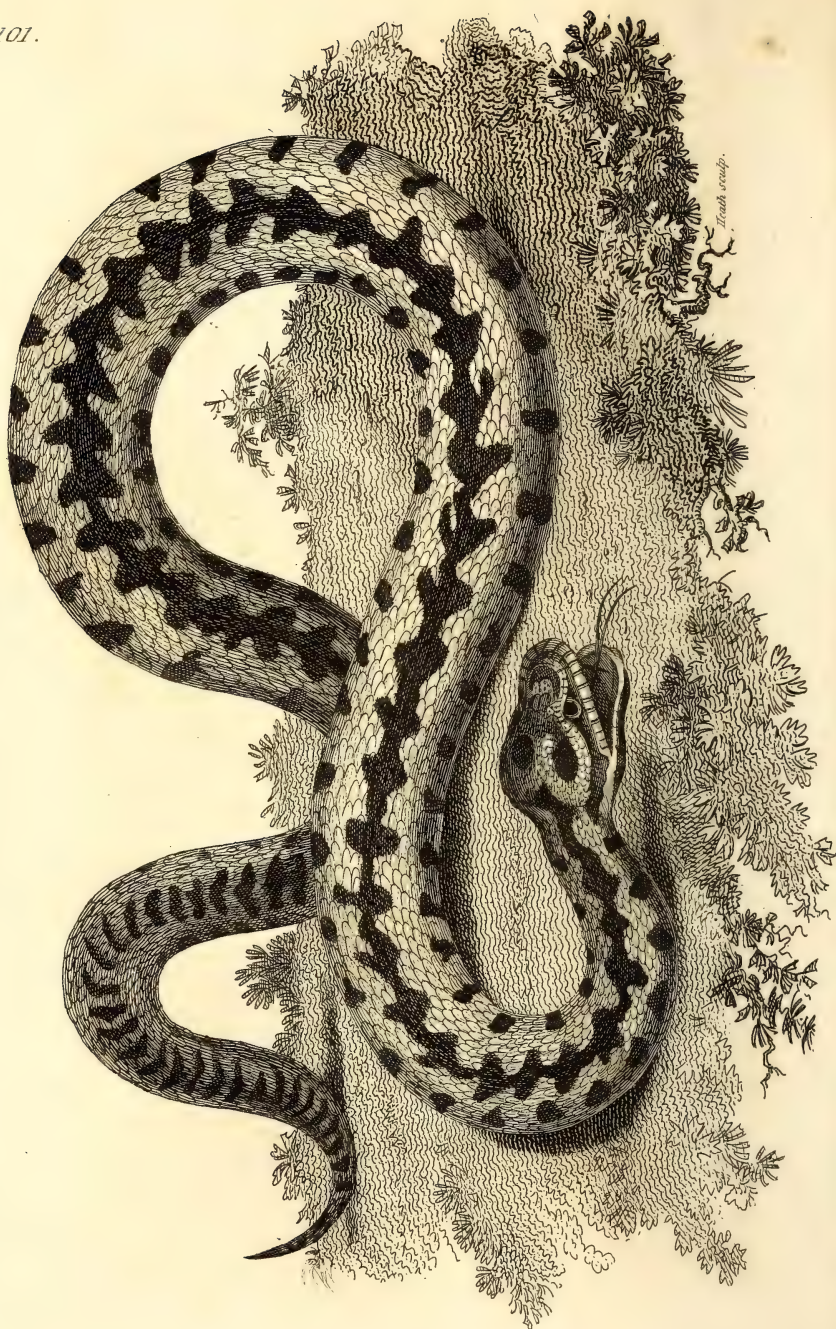
This species occurs in the Museum of Dr. William Hunter. The only author who has figured the animal seems to be Madam Merian, who has introduced it as an ornament to her fifth plate of the *Surinam Insects*: it is, therefore a native of South America.

COLUBER. SNAKE.

*Generic Character.**Scuta* abdominalia.*Squamæ* subcaudales.*Scuta* or undivided lamellæ
under the abdomen.Broad alternate *Scales* under
the tail.

THIS is by far the most numerous of all the Linnæan genera of Serpents, and the species differ greatly in size and habit, according to their respective tribes; some, as the Vipers, having large, flattish, and subcordate heads, with rather short than long bodies and tails; while others, as the major part of the harmless serpents, have, in general, small heads, with longer bodies and tails in proportion. In some few species, exclusive of the usual subcaudal scales, are a few *scuta* or undivided lamellæ, either at the beginning, or towards the tip of the tail. It is to be observed, that in the investigation of this genus the *subcaudal scales*, though alternate, are reckoned by pairs, so that the number marked under the respective species is always to be understood to mean so many pair.

COMMON VIPER.

*Teeth sculp.*

COMMON VIPER.

Coluber Berus. *C. cinereus, macula capitis biloba, vitta dorsali atra dentato-repanda.*

Cinereous Viper, with a bilobate spot on the head, and a black flexuous or zigzag band down the back.

Coluber Berus. *Lin. Syst. Nat. p. 377.*

The Viper. *Penn. Brit. Zool. 4. p. 25.*

Vipera. *Gesn. Aldrov. Raj. &c. &c.*

Abdominal scuta 146, subcaudal scales 39.

THE Viper, which appears to be pretty generally diffused over the whole ancient continent, and which is by no means uncommon in our own island, has been known from times of remote antiquity, though all the particulars relative to its nature and manners are even yet not fully understood. It appears to vary considerably in colour, from a pale or yellow-ferruginous to a deep or dull brown, but all these varieties agree in being marked by a continued chain or series of confluent rhomboid blackish spots, which commencing at the back of the head, are continued to the extremity of the tail, growing proportionally wider and more confluent as they approach that part, forming a kind of transversely barred pattern on its surface: the head is broad, somewhat flattened, and bulges out more or less on each side at the back part: the front of the head is blackish, and on the upper part is a large divided and somewhat heart-shaped mark, or spot, the obtuse divisions of which are directed backwards: the lips are somewhat barred or variegated with black and light grey or whitish, and along each side of the

body runs a row of roundish or rather obscurely subtrigonal dusky spots, continuing to the end of the tail: the scales on the whole upper part of the animal, are carinated: the under surface is of a dusky or blackish colour, with a blueish gloss somewhat resembling that of polished steel: the general length of the Viper is about a foot and half, or two feet, though some have been seen of much greater length, measuring near three feet: the fangs are situated, as in other poisonous serpents, on each side the fore part of the upper jaw, and are generally two in number, with a few smaller ones lying near the principal or large fangs, as if intended by Nature to supply the place of the former when lost either by age or accident.

The Viper has always been considered as the most poisonous of the European serpents, and innumerable are the cases recorded by medical and other writers of the fatality of its bite: yet the instances, in our own island at least, seem to be far less frequent than generally supposed; and though the bite of this animal produces a painful and troublesome swelling, yet it is rarely of any other bad consequence. No doubt the case must differ, as in the bite of every other poisonous serpent, according to the nature of the part bitten, the constitution of the person, the strength and vigour of the animal, the season of the year, &c. &c. and if the bite happens directly on a vein, it may perhaps be productive of the most alarming symptoms, and even sometimes prove fatal: yet

Fontana, even in the warm climate of Italy, seems to doubt whether any well-attested instance could be adduced in which the viper had killed any person by its bite: but so discordant are the testimonies of authors on the subject, that the judgement is necessarily left suspended, not only relative to the effect of the bite, but to the nature of the poison itself, and its effect on the animal frame either when injected into the blood, or received into the stomach. The poison of the Viper, according to Dr. Mead, and his associates in the experiment, is, “when diluted with a little warm water, very sharp and fiery when tasted with the tip of the tongue, as if the tongue had been struck through with something scalding or burning: this sensation went off in two or three hours; and one gentleman, who would not be satisfied without trying a large drop undiluted, found his tongue swelled, with a little inflammation; and the soreness lasted two days.” On the contrary, the Abbé Fontana and some others describe it as of no particular acrimony of taste, but rather resembling oil or gum; and Dr. Russel, in his work on Indian Serpents, affirms the same even of the poison of the Cobra de Capello. Nearly equal contradictions take place relative to the effect of the viperine poison taken into the stomach; Boerhaave quoting the well-known case of Jacob Sozzi, who at the court of the Duke of Tuscany is said to have swallowed three drams of this poison without experiencing any ill effect; while Fontana, on the

contrary, affirms, that this cannot be done with impunity, though it may not produce symptoms like those of the bite. Some of the older writers equally disagree on this point; Matthiolus affirming, that when sucked out of the wound it has proved fatal, while others have admitted the general opinion of the ancients, that it was harmless when thus received; and on this supposition depended the practice of the *Psylli*, African tribes who followed this mode of curing those who were bitten by serpents, and who were employed, according to Lucan, by Cato, in his march through the Lybian deserts, for the recovery of his wounded soldiers. Cato is also said to have assured his men, who feared to drink of the fountains, lest they should be infected by the poison of serpents, that, however noxious the bites of those animals might be, yet the poison must lose its effect when mixed with the water and drank.

“ Jam spissior ignis,

Et plaga, quam nullam Superi mortalibus ultra

A medio fecere die, calcatur, et unda

Rarior: inventus mediis fons unus arenis

Largus aquæ: sed quem serpentum turba tenebat

Vix capiente loco: stabant in margine siccæ

Aspides, in mediis sitiebant Dipsades undis.

Ductor, ut aspexit perituros fonte relicto,

Alloquitur: Vana specie conterritæ leti

Ne dubita miles tutos haurire liquores:

Noxia serpentum est admisto sanguine pestis:

Morsu virus habent, et fatum dente minantur:

Pocula morte carent: dixit, dubiumque venenum

Hausit.”

And now with fiercer heat the desert glows,
And mid-day gleamings aggravate their woes :
When lo ! a spring amid the sandy plain
Shews its clear mouth to cheer the fainting train.
But round the guarded brink in thick array
Dire aspics roll'd their congregated way ;
And thirsting in the midst the torrid Dipsas lay.
Blank horror seiz'd their veins ; and at the view
Back from the fount the troops recoiling flew :
When, wise above the crowd, by cares unquell'd,
Their awful leader thus their dread dispell'd :
Let not vain terrors thus your minds enslave ;
Nor dream the serpent brood can taint the wave :
Urg'd by the fatal fang their poison kills ;
But mixes harmless with the bubbling rills.
Dauntless he spoke, and bending as he stood,
Drank with cool courage the suspected flood.

“The symptoms,” says Dr. Mead, “which follow the bite of a Viper, when it fastens either one or both its greater teeth in any part of the body, are an acute pain in the place wounded, with a swelling, at first red, but afterwards livid, which by degrees spreads farther to the neighbouring parts ; with great faintness, and a quick, though low, and sometimes interrupted, pulse ; great sickness at the stomach, with bilious, convulsive vomitings, cold sweats, and sometimes pain about the navel ; and if the cure be not speedy, death itself, unless the strength of nature prove sufficient to overcome these disorders : and though it does, the swelling still continues inflamed for some time ; nay, in some cases, more considerably upon the abating of the other symptoms than at the beginning ; and often from the small wound runs a

sanious liquor, and little pustules are raised about it: the colour of the whole skin, in less than an hour, is changed yellow, as if the patient had the jaundice. These mischiefs (although different climates, season of the year more or less hot, the greater or lesser rage of the Viper, the animal itself of a larger or smaller size, and consequently able to communicate more or less venom, the wound made deeper, in a part more nervous or tendinous, and therefore receiving more of the poisonous liquor, and the like circumstances, may variously heighten or abate them), yet usually discover themselves much after the same manner in all; unless the bite happen not to be accompanied with the effusion of that liquor which is the main instrument and cause of this violent and shocking disturbance."

Dr. Mead caused several animals, viz. dogs, cats, and pigeons, to be bitten by an enraged Viper; which animals generally died, some in a longer, and some in a shorter space of time; but it was observed that they all, immediately after being bitten, exhibited signs of acute pain, as if affected with sickness, faintings, convulsions, &c. The head of a large Viper lay three hours after it was cut off: it was perfectly flaccid, and without motion: a pigeon, wounded on the thigh by the fangs of this head, was presently convulsed, &c. as from the bite of the living animal, and died in seven hours.

The poison of the Viper was in ancient times collected by barbarian nations as a poison for their

arrows, the Scythians, according to Pliny, using it for that purpose mixed with human blood: the poison of other serpents is used in a similar manner by savage nations at the present day*.

“The viperine poison,” says Boerhaave, “is rendered inactive by digestion in the stomach and bowels, so that it will not afterwards exert its sad effects on the blood; for a whole ounce of the viperine venom taken by the mouth will not kill an animal; when at the same time a small needle only, dipped in the same fluid, taking up perhaps no more than a hundredth part of a drop, and then thrust into the blood of the living animal, almost infallibly kills.”

“A Viper,” says the same author, “being enraged by the members of the Tuscan Academy, and then suffered to bite the nose of a strong bull, the animal died in a short time, and being opened by the most expert anatomists, no uncommon alteration could be perceived either in the solid or fluid parts of the beast.”

The most established application for the bite of a Viper is common olive oil, thoroughly rubbed on the wounded part: this the Viper-Catchers† use, as is pretended, with perfect success; and all other applications, as volatile alkali, &c. &c. seem of far less certain efficacy.

* In this theory of poisoning darts there appears nothing improbable when we consider the effects of the variolous matter dried on the point of a lancet and used in inoculation.

† See the case of Isaac Oliver, in the Philosophical Transactions.

The Viper, though so much dreaded on account of its bite, has been very highly esteemed, both by the ancients and moderns, in a medical view, and used as a restorative and strengthening diet. This idea seems to have originated from the animal's casting its skin, like other snakes, and thus appearing, as it were, in a state of renovated youth; and the Snake being made the emblem of health, and consecrated to Æsculapius, must have depended on the same idea. The ancients used the flesh of the Viper in leprous and other cases. The Greek physician Craterus, mentioned so often by Cicero in his epistles to Atticus, cured, as Porphyrius relates, a miserable slave, whose skin in a strange manner fell off from his bones, by advising him to feed on Viper's flesh in the manner of fish. Antonius Musa, physician to Octavius Cæsar (Augustus), is said by Pliny to have ordered the eating of Vipers in the case of otherwise incurable ulcers, which by this method were quickly healed. Galen says that those who are afflicted with Elephantiasis are wonderfully relieved by eating Viper's flesh dressed like eels; and relates very remarkable cures of this disease performed by means of viper wine. Aretæus, who probably lived about the same time with Galen, and who of all the ancients has most accurately described the above disorder, commends, as Craterus did, the eating of Vipers instead of fish in the same diseases. Lopez, in his History of Congo, says the negroes eat roasted adders, and account them a most delicious food. In India the Cobra de Capello is said

to be successfully given to be eaten by persons in long wastings and declines. In France and Italy the broth, jelly, and flesh of Vipers is in much esteem as a restorative medicine*. Dr. Mead thinks the best method is to boil them like fish, “and if this will not go down, though it is really delicious fare,” to make use of wine in which they have been digested two or three days in a gentle heat, from which, he says, he has seen very good effects in obstinate lepras.

Though from these attestations it sufficiently appears that the flesh of the Viper is really nutritive and good, yet, such are the revolutions of medical as well as of common taste, that Viper's flesh has now lost a great part of its former credit, and is very rarely prescribed in modern practice.

The apparatus of poison in the Viper is the same as in the Rattle-Snake and all other poisonous serpents, and will be found described anatomically under that article, &c.

The Viper, as before observed, is subject to vary much in colour, being sometimes of a fine pale grey, or pale ferruginous, with very deep and distinct markings or pattern: sometimes dull brown with less distinct ditto: and, lastly, black, with scarce perceptible pattern, which latter variety has

* The above account of the supposed virtues of Viper's flesh is chiefly from Dr. Mead. It may be added, that the celebrated Sir Kenelm Digby, for the recovery of his beloved wife, the Lady Venetia Digby, from a consumption, caused her to feed on capons fattened with vipers.

been called *Vipera Anglica nigrans*, and is by some considered as a distinct species.

The Viper is viviparous, producing its young towards the close of summer. "On the 4th of August, 1755," says Mr. White*, "we surprised a large female Viper, which seemed very heavy and bloated, as it lay on the grass, basking in the sun. When we came to cut it up, we found that the abdomen was crowded with young, fifteen in number; the shortest of which measured full seven inches, and were about the size of full-grown earthworms. This little fry issued into the world with the true viper spirit about them, shewing great alertness as soon as disengaged from the belly of the dam: they twisted and wriggled about, and set themselves up, and gaped very wide when touched with a stick, shewing manifest tokens of menace and defiance, though as yet they had no manner of fangs that we could find, even with the help of our glasses." Mr. White, in another part of his work, informs us, that in the month of May a female Viper was opened, which had in it a chain of eleven eggs, about the size of those of a blackbird; but not so far advanced as to shew the rudiments of the young.

"Several intelligent folks," adds Mr. White, "assure me that they have seen the Viper open her mouth, and admit her helpless young down her throat on sudden surprises, just as the Opos-

* White's Selburne.

sum does her brood into the pouch under her belly upon the like emergencies; and yet the London Viper-Catchers insist on it to Mr. Barrington that no such thing ever happens."

Sir Thomas Brown, however, seems inclined to believe this circumstance. "The young," says he, "supposed to break through the belly of the dam, will upon any fright, for protection, run into it; for then the old one receives them in at her mouth, which way, the fright being past, they will return again, which is a peculiar way of refuge, and although it seem strange, is avowed by frequent experience and undeniable testimony."

I must add, that I have myself received on this subject the information of a gentleman of great accuracy of observation, and who assures me of the truth of this particular in the natural history of the Viper.

VAR.?

BLACK VIPER.

Coluber Prester. *C. niger, vitta dorsali dentata nigerrima.*

Black Viper, with jet-black dentated dorsal band.

Coluber Prester. *Lin. Syst. Nat. p. 337.*

Vipera Anglica nigrans. *Petiv. Mus. p. 17. n. 104.*

Abdominal scuta 152, subcaudal squamæ 32.

THIS Viper is found in some parts of England, and is said likewise to occur in Austria, and in some of the northern regions of Asia. It resembles the common Viper in every particular except

colour ; being of a deep black, with an indistinct appearance of the dorsal band of a still more intense colour : the edges of the lips are bordered with whitish specks, and in some specimens the neck and tail are marked with a few indistinct yellowish spots. Mr. Pennant, in the *British Zoology*, considers it as a mere variety of the common viper ; but by others, and particularly by Laurenti, it is regarded as a distinct species ; and is ranked as such in the *Systema Naturæ* of Linnaeus. It is generally supposed to be equally poisonous with the common Viper : yet if the Austrian Black Viper of Laurenti be really the same kind with that found in other parts of Europe, it should seem to be innoxious : but perhaps the specimens which he made use of in conducting his experiments had either not arrived at their full size and vigour, or had previously discharged their poison by biting other animals : since the pigeons and chickens which he exposed to its fury, were no otherwise injured than by mere puncture, without suffering any symptoms of poison.

AMERICAN BLACK VIPER.

*Will. Wood.*

AMERICAN BLACK VIPER.

Coluber Cacodæmon. *C. ater, capite lato tumido, corpore crasso.*

Black Viper, with broad tumid head, and thick body.

Black Viper. *Catesb. Carol. 2. pl. 44.*

THIS, according to Catesby, appears to be about the size of the Common Viper, but of a much thicker form, and entirely of a rusty black colour: it is slow in its motions, and when irritated, spreads its head, which is naturally large, into a surprising width; threatening, at the same time, with a horrid hiss: the fangs are large, and the animal is said to be as dangerous as the Rattlesnake. It is a native of Carolina, chiefly frequenting the higher grounds.

EGYPTIAN VIPER.

Coluber Vipera. *C. subferrugineus, fusco maculatus, subtus albidus, cauda brevi mucronata.*

Subferruginous Viper, spotted with brown, beneath whitish, with short mucronated tail.

Coluber Vipera. *Lin. Syst. Nat. p. 275. Hasselq. itin. p. 340.*

Abdominal scuta 118, subcaudal scales 22.

THIS, which is said to be the officinal Viper of the Egyptians, seems to have been first accurately described by Hasselquist, who informs us that it is imported in considerable quantities every year to Venice for the use of the apothecaries in the

composition of the Theriaca, &c. Its size is somewhat smaller than that of the common Viper: the head not so flat on the top, but very protuberant on each side: the snout very obtuse: the body thick towards the middle, and somewhat quadrangular, but thin and cylindric towards the head and tail, which latter is short, slender, conical, and terminated by a slightly incurved horny point or tip: the scales on all the upper parts of the animal are oval and carinated: the colour above is pale-ferruginous with darker spots, and beneath entirely whitish: the usual length of this species, according to Hasselquist, is about two spans and an inch, of which the tail measures only an inch. This is by some supposed to be the Asp of Cleopatra, by the bite of which that high-spirited princess determined to die, rather than submit to be carried to Rome in order to grace the triumph of Augustus. It seems, however, utterly impossible to determine this point. Mr. Bruce, as the reader will find in the description of the *Cerastes*, rather supposes that serpent to have been the species employed. Mr. Schneider, in his work, entitled *Historia Amphibiorum*, considers the Egyptian Viper above described to be the true *Dipsas* of the ancients which was popularly reported to kill by thirst.

AMMODYTES.

Coluber Ammodytes. *C. glauco-fuscus, vitta dorsali dentata atra, verruca nasali erecta.*

Glaucous-brown Viper, with dentated black dorsal band, and upright nasal wart.

Coluber Ammodytes. *Lin. Syst. Nat. p. 376. Aldr. Serp. 169.*
Abdominal scuta 142, subcaudal squamæ 32.

THIS species is greatly allied to the Viper in general appearance, but is always distinguished by an erect pointed process on the tip of the snout: its usual colour is either blueish-grey or brown, with a continued black dorsal band resembling that of the Viper. It is found in many parts of the eastern regions, and is used medicinally for the same purposes as the common Viper. It is considered as an extremely poisonous species; and, according to Matthiolus, proves fatal in the space of three hours.

 CHARASIAN VIPER.

Coluber Charasii. *C. rufus, naso supra subacuminato, corpore striis brevibus fuscis transversis subconfluentibus notato.*

Rufous Viper, with the nose acuminate above, and the body marked with short, subconfluent, dusky transverse streaks.

La Vipere. *Charas. Nov. Exper. t. 1. A. A. A.*

THIS species is described by a French author of the name of Charas, who, though well acquainted with the anatomy of the animal, and the

structure and use of the fangs and receptacle of poison, yet contended, in opposition to the celebrated Redi, that when a Viper bit, the symptoms of poison succeeding the bite, were caused by what he termed the "*enraged spirits*" of the creature, and not by the supposed poisonous fluid. This species has the general appearance of the *Berus*, or common viper, but is distinguished by the want of the dorsal band, so conspicuous in that animal, and by the upright, subacuminated tip of the snout: the colour of the upper parts is ferruginous, marked with several short, scattered, and subconfluent letter-like streaks here and there dispersed on the skin: the under parts are of a dusky colour, with a steely lustre, and are speckled with yellow. This species is a native of France, and in its general manners, as well as in size, appears to resemble the common Viper, of which it has sometimes been suspected a variety.

REDI'S VIPER.

Coluber Redi. *C. fusco-ferrugineus, serie dorsali quadruplici transversa striarum brevium subconfluentium fuscæ.*

Ferruginous-brown Viper, with a quadruple transverse dorsal series of short subconfluent brown streaks.

Coluber Redi. *Lin. Syst. Nat. Gmel. p. 1091,*

Abdominal scuta 152, subcaudal squamæ 33.

THIS is greatly allied to the common Viper, but differs in being marked throughout the whole length of the upper parts, with a quadruple series

of short, transverse, alternate streaks, of which the intermediate ones are often confluent: the colour of the under parts is rufous, more especially towards the head and tail. This is the *Vipera* of Redi, and is the species with which the experiments of that philosopher relative to animal poisons were principally made. It is found in many parts of Italy, as well as in Austria, and is said to be more poisonous than the common Viper.

ASP.

Coluber Aspis. *C. rufescens, maculis dorsalibus subrotundatis fuscis alternis, versus caudam subconfluentibus.*

Rufescent Viper, with roundish, alternate, dusky, dorsal spots, subconfluent towards the tail.

Coluber Aspis? *Lin. Syst. Nat. p. 378.*

L'Aspic. *Cepede Serp. p. 53. pl. 2. f. 1.*

Abdominal scuta 155, subcaudal scales 37.

THE true Asp of the ancients seems to be entirely unknown, owing to the discordant descriptions and want of precision in the works of ancient authors; but the Linnæan Coluber Aspis is supposed to be the serpent described under the name of *Aspic* by the Count de Cepede, who informs us that it is a native of France, and particularly of the northern provinces of that country. The individual described by Cepede measured about three feet in length, of which the tail measured three inches and eight lines: the head is rather large, and covered with small carinated scales, the body with larger, of similar structure:

the colour is pale rufous grey, and along the upper parts are three longitudinal ranges of roundish deep-rufous spots, bordered with black, and which unite or become confluent towards the tail, in such a manner as to exhibit the appearance of a zigzag band, resembling in some degree that of the common Viper: the under parts are of a dusky colour, marbled with dull yellow: in the structure of its fangs it resembles the Viper, and is said to be equally poisonous. I must not omit to observe that Mons. Latreille is not willing to allow this serpent to be the real *Coluber Aspis* of Linnæus.

SWEDISH VIPER.

Coluber Chersea. C. subferrugineus, vitta dorsali atra flexuosa, capite subtus albido.

Subferruginous Viper, with black flexuous dorsal band, and head whitish beneath.

Coluber Chersea. Lin. Syst. Nat. p. 377.

Abdominal scuta 150, subcaudal scales 34.

THIS is said by Linnæus to be extremely nearly allied to the preceding, of which it might even be supposed a variety, but is of smaller size, not often exceeding the length of a span: it is said to be most frequent in the province of Smoland, where it is greatly dreaded by the inhabitants, who consider its bite as mortal: its colour is a dusky rufous brown, with a flexuous dorsal band of a deeper colour, as in the common Viper: the head is ovate, of a pale colour, and marked with

a heart-shaped dusky spot, the divisions of which are directed backwards. In the Memoirs of the Swedish Academy is an account of a young man, a labourer, bit by this animal on the toe of the left foot: in six hours space the whole leg and thigh were red and swelled; the pulse intermitted, and the patient was oppressed with pains in the head and bowels, accompanied by lassitude, &c. the juice of the ash-leaves being in Sweden a popular specific in similar cases, a glass of the expressed juice, mixed with wine, was exhibited every half hour, and a cataplasm of the bruised leaves applied to the wound: in the evening a glass of warm olive oil was swallowed. By these means the patient was greatly relieved; slept well during the night, and found the swelling much reduced by the next morning; but, neglecting to repeat the same remedies, it again returned, and was again dissipated by the same applications, and in two or three days the patient recovered. Linnaeus, however, is said to have been not so fortunate in his attempts to cure, by means of olive oil, a woman wounded by this kind of viper, since the medicine proved inefficacious, and the woman died.

GREEK VIPER.

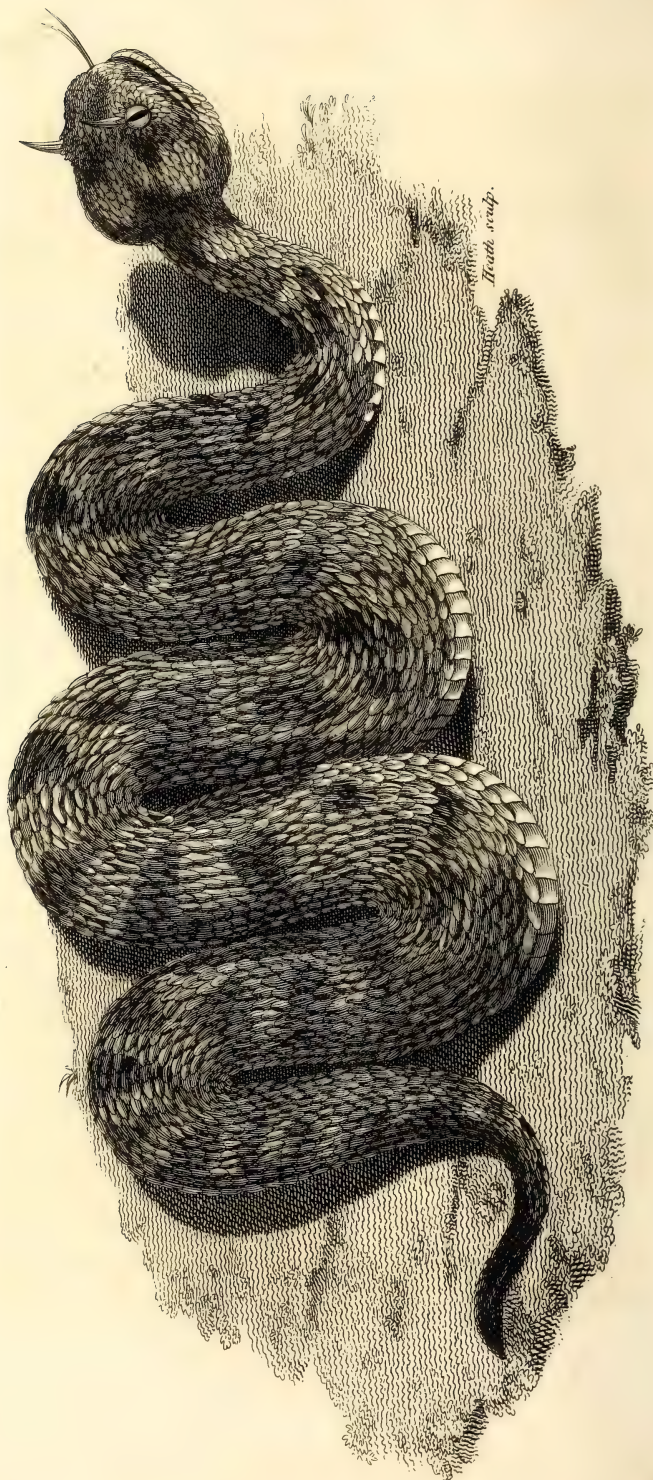
Coluber Lebetinus. C. griseus, serie quadruplici macularum transversarum; intermediis flavescentibus, lateralibus nigrificantibus.

Grey Viper, with a quadruple series of transverse spots, the middle ones yellowish, the lateral dusky.

Coluber Lebetinus. Lin. Syst. Nat. p. 278.

Abdominal scuta 155, subcaudal squamæ 46.

THIS is a Viper of considerable size, measuring, according to Forskal, near a cubit in length, and being of a very thick form towards the middle: the head is large, broad, depressed, and subcordate: the neck rather slender: the tail about four inches long: the scales on the head small, and those on the other parts larger, ovate-obtuse, flat, and carinated: the back is deflected considerably on each side: colour grey: with four series of alternate transverse spots, those of the middle series yellowish, and those of the lateral blackish: the under parts pale or whitish, pretty thickly freckled with dusky specks. This snake is a native of Greece and the Grecian islands, as Cyprus, &c. where it is called by the name of *Kufi* (Κῦφι), or deaf snake. Its bite is said by Forskal to prove fatal, producing insuperable somnolency. By the more learned, in those regions, it is termed *Aspis*, and Forskal supposes it to have been the *Aspis* of the ancients. It is said to be often found in corn fields during the harvest season, and is much dreaded by the Grecian reapers.



CERASTES.

SCYTHIAN VIPER.

Coluber Scythæ. *C. supra nigerrimus, subtus albus.*

Coal-black Viper, white beneath.

Coluber Scythæ. *Lin. Syst. Nat. Gmel. p. 1091.*

Abdominal scuta 153, subcaudal squamæ 31.

NATIVE of the woods of Siberia; observed by Dr. Pallas, who informs us that it grows to the length of half a foot or more, and is of the thickness of a finger: colour a very deep black above, but white and glossy beneath: head subcordate; tail about one tenth of the whole length: poisonous, but not dangerously so.

 CERASTES.

Coluber Cerastes. *C. subferrugineus, maculis distantibus subovatis subtransversis fuscis, palpebris cornutis.*

Subferruginous Snake, with distant subovate subtransverse brown spots, and horned eyelids.

Coluber Cerastes. *Lin. Syst. Nat. p. 376.*

Cerastes ex Lybia. *Aldr. Serp. p. 175.*

Cerastes. *Bruce's Travels, appendix.*

Abdominal plates 150, subcaudal scales 25 pair.

THE Cerastes or Horned Viper, which commonly grows to the length of about a foot or fifteen inches, and sometimes to a larger size*, is distinguished by a pair of horns or curved pro-

* The specimens described by Cepede measured more than two feet, as does also that in the British Museum.

cesses, situated above the eyes, and pointing forwards: these horns have nothing analogous in their structure to the horns of quadrupeds, and are by no means to be considered in the light of either offensive or defensive weapons: they increase, however, the natural antipathy so generally felt against the serpent tribe, and give the animal a more than ordinary appearance of malignity. The Cerastes is a native of many parts of Africa, and is principally found in sandy deserts and dry places. Its usual colour is a pale yellowish or reddish brown, with a few rather large, distant, round, or transversely oblong spots of a deeper colour dispersed along the upper parts of the body, the belly or under part being of a pale lead colour. In Syria and Arabia the Cerastes is particularly frequent, and is also found in many parts of Egypt, &c. It bears a very great affinity to the common Viper, and its bite is perhaps still more to be dreaded, since, exclusive of the general danger of treading accidentally on this reptile, and thus irritating it unawares, it is said to possess a propensity of springing with great suddenness to a considerable distance, and assailing without provocation those who happen to approach it.

The general history and manners of this serpent are amply detailed by Mr. Bruce, who, in the course of his travels, had frequent opportunities of contemplating it in its native regions.

“The Cerastes,” says Mr. Bruce, “inhabits the greatest part of the Eastern Continent, espe-

cially the desert sandy part of it. It abounds in the three Arabias, and in Africa. I never saw so many of them as in the Cyrenaicum, where the Jerboa is frequent in proportion. He is a great lover of heat; for though the sun was burning hot all day, when we made a fire at night, by digging a hole, and burning wood to charcoal in it, for dressing our victuals, it was seldom we had fewer than half a dozen of these vipers, who burnt themselves to death by approaching the embers. The general size of the Cerastes, from the extremity of its snout to the end of the tail, is from thirteen to fourteen inches: its head is triangular, very flat, but higher near where it joins the neck than towards the nose: the length of its head, from the point of the nose to the joining of the neck, is ten twelfths of an inch, and the breadth nine twelfths: between its horns is three twelfths: the opening of its mouth, or rictus oris, is eight twelfths: its horns in length three twelfths: its large canine teeth something more than three twelfths and a half: its neck, at the joining of the head, four twelfths: the body, where thickest, ten twelfths: its tail, at the joining of the body, two twelfths and a half: the tip of the tail one twelfth: the length of the tail one inch and three twelfths: the aperture of the eye two twelfths, but this varies, apparently according to the impression of light. The Cerastes has sixteen small, immoveable teeth, hollow, crooked, inwards, and of a remarkably fine polish, white in colour, inclining to blueish: near one fourth of the bottom is

strongly fixed in the upper jaw, and folds back like a clasp knife, the point inclining inwards, and the greatest part of the tooth is covered with a green, soft membrane, not drawn tight, but as it were wrinkled over it: immediately above this is a slit along the back of the tooth, which ends nearly in the middle of it, where the tooth curves inwardly. From this aperture I apprehend that it sheds its poison, not from the point, where, with the best glasses, I could never perceive an aperture, so that the tooth is not a tube, but hollow only half way; the point being for making the incision, and by its pressure occasioning the venom in the bag at the bottom of the fang, to rise in the tooth, and spill itself through the slit into the wound. By this flat position of the tooth along the jaw, and its being defended by the membrane, it eats in perfect safety; for the tooth cannot press the bag of poison at the root while it lies in this position, nor can it rise in the tube to spill itself, nor can the tooth make any wound, so as to receive it; but the animal is supposed to eat but seldom, or only when it is with young. This viper has only one row of teeth; none but the canine are noxious. The poison is very copious for so small a creature, it is fully as large as a drop of laudanum dropt from a vial by a careful hand. Viewed through a glass, it appears not perfectly transparent or pellucid. I should imagine it hath other reservoirs than the bag under the tooth, for I compelled it to scratch eighteen pigeons upon the thigh as quickly as possible, and they all died nearly

in the same interval of time ; but I confess the danger attending the dissection of the head of this creature made me so cautious, that any observation I should make upon these parts would be less to be depended upon."

" People have doubted whether or not this yellow liquor is the poison, and the reason has been, that animals who had tasted it, did not die as when bitten, but this reason does not hold good in modern physics. We know why the saliva of a mad dog has been given to animals, and has not affected them ; and a German physician was bold enough to distil the pus or putrid matter flowing from the ulcer of a person infected by the plague, and taste it afterwards, without bad consequences ; so that it is clear the poison has no activity till through some sore or wound it is admitted into the circulation. Again, the tooth itself, divested of that poison, has as little effect. The viper deprived of his canine teeth, an operation very easily performed, bites, without any fatal consequence, with the others ; and many instances there have been of mad dogs having bit people cloathed in coarse woollen stuff, which had so far cleaned the teeth of the saliva in passing through it, as not to have left the smallest inflammation after the wound."

" The Cerastes is mentioned by name in Lucan, and without warranting the separate existence of any of the rest, I can see several that are but the Cerastes under another term : the Thebanus Ophites, the Ammodytes, the torrida Dipsas, and

the Prester, all of them are but this viper, described from the form of its parts or colours *. Cato must have been marching in the night when he met this army of serpents: the Cerastes hides itself all day in holes in the sand, where it lives in contiguous and similar houses to those of the Jerboa; and I have already said, that I never but once found any animal in this viper's belly, but one Jerboa in a gravid female Cerastes."

"I kept two of these last-mentioned creatures in a glass jar, such as is used for keeping sweetmeats in, for two years, without having given them any food: they did not sleep, that I observed, in winter, but cast their skins the last days of April. The Cerastes moves with great rapidity, and in all directions, forward, backward, and sideways. When he inclines to surprise any one, who is too far from him, he creeps with his side towards the person, and his head averted, till judging his distance, he turns round, springs upon him, and fastens upon the part next to him; for it is not true what is said, that the Cerastes does not leap or spring. I saw one of them at Cairo, in the house of Julian and Rosa, crawl up the side of a box, in which there were many, and there lie still as if hiding himself, till one of the people who brought them to us, came near him, and though in a very disadvantageous posture, sticking, as it were, perpendicular to the side of the box, he leaped near the distance of three feet, and

* Luc. lib. 9.

fastened between the man's fore-finger and thumb, so as to bring the blood. The fellow shewed no sign of either pain or fear, and we kept him with us full four hours, without his applying any sort of remedy, or his seeming inclined so to do. To make myself assured that the animal was in its perfect state, I made the man hold him by the neck, so as to force him to open his mouth, and lacerate the thigh of a pelican, a bird I had tamed, as big as a swan. The bird died in about thirteen minutes, though it was apparently affected in fifty seconds; and we cannot think this was a fair trial, because, a very few minutes before, it had bit the man, and so discharged part of its virus, and it was made to scratch the pelican by force, without any irritation or action of its own."

"I apprehend this to be the Aspic, which Cleopatra employed to procure her death. Alexandria, plentifully supplied by water, must then have had fruit of all kinds in its gardens: the baskets of figs must have come from thence, and the Aspic or Cerastes that was hid in them, from the adjoining desert, where they are plenty to this day; for to the westward in Egypt, where the Nile overflows, there is no sort of serpents whatever that ever I saw, nor, as I have before said, is there any other of the mortal kind that I know, in those parts of Africa adjoining to Egypt, excepting the Cerastes. It should seem very natural for any one, who, from motives of distress, has resolved to put a period to his existence, especially women, and weak persons, unaccustomed to handle arms, to seek

the gentlest method to free themselves from the load of life now become insupportable. This, however, has not always been the case with the ancients. Arria, Poetus's wife, stabbed herself with a dagger, to set her husband an example to die, with this memorable assurance, after giving herself the blow, *Poetus, it is not painful!* Porcia, the wife of Brutus, died by the barbarous, and not obvious way of perishing, by swallowing fire; the violent agitation of spirits prevailing over the momentary difference in the suffering. It is not to be doubted but that a woman, high-spirited like Cleopatra, was also above the momentary differences in feeling; and had the way in which she died not been ordinary and usual, she certainly would not have applied herself to the invention of a new one. We are therefore to look upon her dying by the bite of the Cerastes as only following the manner of death which she had seen adopted by those who intended to die without torment. Galen, speaking of the Aspic in the great city of Alexandria, says, I have seen how speedily they (the Aspicks) occasioned death. Whenever any person is condemned to die whom they wish to end quickly and without torment, they put the viper to his breast, and suffering him there to creep a little, the man is presently killed. Pausanias speaks of particular serpents that were to be found in Arabia, among the balsam-trees, several of which I procured, both alive and dead, when I brought the tree from Beder Hunein; but they were still the same species of

serpent, only some from sex, and some from want of age, had not the horns, though in every other respect they could not be mistaken. Ibn Sina, called by the Europeans Avicenna, has described this animal very exactly. He says it is frequent in Schem (that is, the country about the south of Damascus), and also in Egypt; and he makes a very good observation on their manners; that they do not go or walk straight, but by contracting themselves; but in the latter part of his description he seems not to have known the serpent he is speaking of, because he says its bite is cured in the same manner as that of the Viper and Cerastes, by which it is implied that the animal he was describing was not a Cerastes, and the Cerastes is not a Viper, both of which assertions are false."

"A long dissertation," adds Mr. Bruce, "would remain on the incantation of serpents. There is no doubt of its reality: the Scriptures are full of it: all that have been in Egypt have seen as many different instances as they chose. Some have doubted that it was a trick, and that the animals so handled, had been first trained, and then disarmed of their power of hurting; and, fond of the discovery, they have rested themselves upon it, without experiment, in the face of all antiquity. But I will not hesitate to aver, that I have seen at Cairo (and this may be seen daily, without trouble or expence), a man who came from above the Catacombs, where the pits of the mummy birds are kept, who has taken a Cerastes with his naked hand, from a number of others lying at the bottom

of the tub, has put it upon his bare head, covered it with the common red cap he wears, then taken it out, put it in his breast, and tied it about his neck like a necklace; after which it has been applied to a hen, and bit it, which has died in a few minutes; and, to complete the experiment, the man has taken it by the neck, and, beginning at the tail, has ate it, as one would do a carrot or a stock of celery, without any seeming repugnance."

"We know from history, that where any country has been remarkably infested with serpents, there the people have been screened by this secret. The Psylli and Marmarides of old undoubtedly were defended in this manner."

Ad quorum cantus mites jacuere Carastæ*.

Sil. Ital. lib. 3.

"To leave ancient history, I can myself avouch, that all the black people in the kingdom of Senaar, whether Funge or Nuba, are perfectly armed against the bite of either scorpion or viper. They take the Cerastes in their hands at all times, put them in their bosoms, and throw them at one another as children do apples or balls, without having irritated them by this usage so much as to bite. The Arabs have not this secret naturally, but from their infancy they acquire an exemption from the mortal consequences attending the bite of these animals, by chewing a certain root, and

* Tame at whose spell the charm'd Cerastes lay.

washing themselves (it is not anointing) with an infusion of certain plants in water. One day, when I was sitting with the brother of Shekh Adelan, prime minister of Sennaar, a slave of his brought a Cerastes, which he had just taken out of a hole, and was using with every sort of familiarity. I told him my suspicion that the teeth had been drawn, but he assured me they were not, as did his master Kitton, who took it from him, wound it round his arm, and at my desire ordered the servant to carry it home with me. I took a chicken by the neck, and made it flutter before him; his seeming indifference left him, and he bit it with great signs of anger: the chicken died almost immediately*: I say his seeming indifference, for I constantly observed, that, however lively the viper was before, yet upon being seized by any of these barbarians, he seemed as if taken with sickness, and feebleness, frequently shut his eyes, and never turned his mouth towards the arm of the person that held him. I asked Kitton how they came to be exempted from this mischief? He said they were born so, and so said the grave and respectable men among them. Many of the lighter and lower sort talked of enchantments by words and by writing, but they all knew how to prepare any person by medicines, which were decoctions of herbs and roots. I have seen many thus armed for a season, do pretty much the same

* Might not this have happened from the tooth piercing the spinal marrow; and would not the same effect have happened, had the chicken been pierced with a pin?

feats as those who possessed the exemption naturally: the drugs were given me, and I several times armed myself, as I thought, resolved to try the experiment; but my heart always failed me when I came to the trial; because among these wretched people it was a pretence they might very probably have sheltered themselves under, that I was a Christian, and that therefore it had no effect upon me. I have still remaining by me a small quantity of this root, but never had an opportunity of trying the experiment."

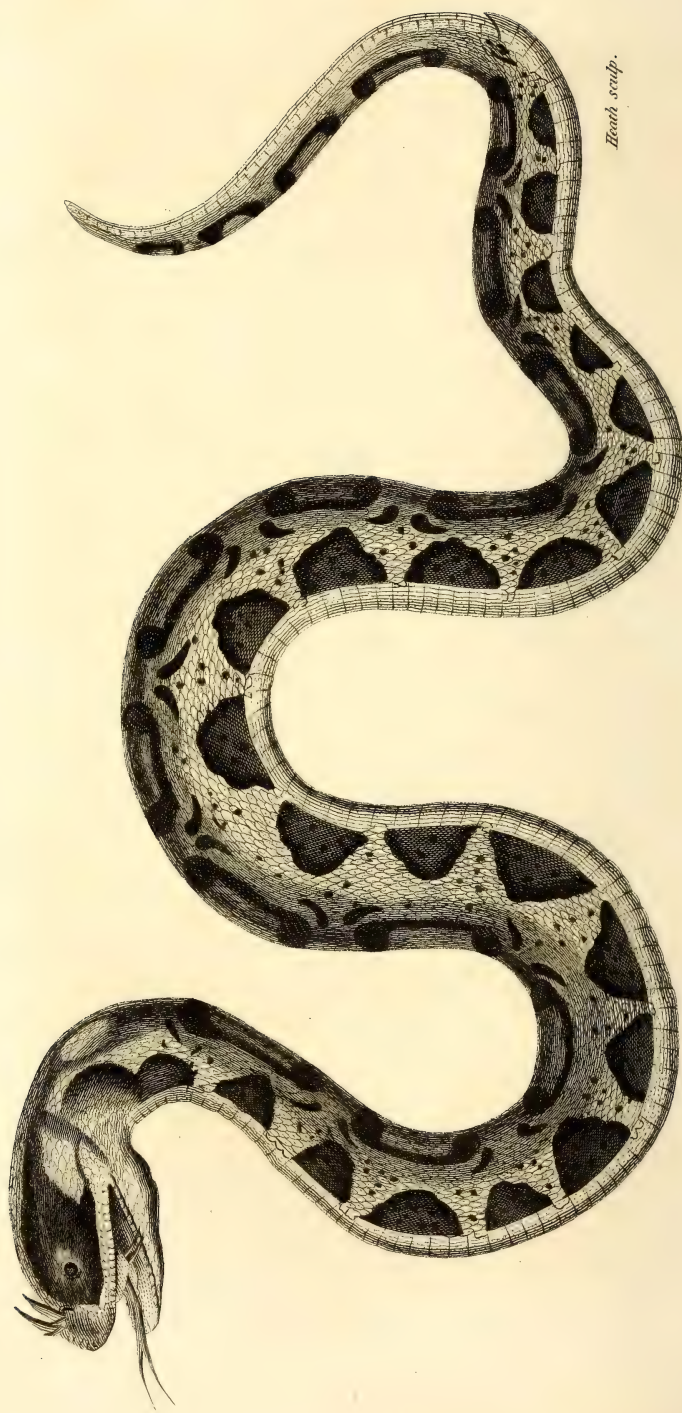
The Cerastes often makes its appearance among the numerous hieroglyphic figures on the various remains of Egyptian antiquity; and is particularly conspicuous on a pair of large sculptured stones brought from Alexandria, and preserved in the British Museum, and which, probably, made a part of the cornice of some magnificent temple.

This animal, like some other poisonous serpents, is supposed to be viviparous.

The admirable figure of the Cerastes, in the Appendix to Mr. Bruce's Travels, is deserving of the highest commendation, and infinitely surpasses every prior representation of the animal. It is, therefore, on account of its superior merit, selected for the present publication.

HORN NOSE SNAKE.

104



Head sculp.

HORN-NOSE SNAKE.

Coluber Nasicornis. C. subolivaceo-flavescens nigro variatus, fascia laterali flexuosa pallida, naso bicorni.

Subolivaceo-flavescient Snake, with black variegations, pale flexuous lateral band, and two-horned snout.

Coluber Nasicornis. C. subolivaceo-ferrugineus, nigro irroratus maculis dorsalibus pallidis nigro circumscriptis, fascia laterali undulata pallida.

Olive-brown Snake, freckled with blackish, with a row of pale dorsal spots surrounded by black, and a flexuous pale fascia on the sides. *Naturalist's Miscellany, pl. 94.*

Abdominal plates 127, subcaudal scales 32 pair.

THIS highly remarkable Snake was first published in the *Naturalist's Miscellany*, and was, prior to the period of its introduction into that work, a perfectly new and undescribed species. I shall therefore repeat, with very slight variations, my former description.

The Snake here represented, adds to the number of those malignant reptiles whose bite, in the hotter regions of the globe, proves the dreadful forerunner of a speedy and painful death. If at the first glance of most of the serpent tribe an involuntary sort of horror and alarm is so often felt by those who are unaccustomed to the examination of these animals, how much greater dread must the unexpected view of the species here exhibited be supposed to inflict? when to the general form of the creature is superadded the peculiar fierceness and forbidding torvity with which Nature has marked its countenance; distinguished

by the very uncommon appearance of two large and sharp-pointed horns, situated, not as in the *Cerastes*, above the eyes, but on the top of the nose or anterior part of the upper jaw. These horns stand nearly upright, but incline slightly backwards and a little outwards on each side, and are of a substance not absolutely horny, but in some degree flexible: their shape is somewhat triangular or three-sided: they are about half an inch in length, and at the fore part of the base of each stands an upright strong scale, of nearly the same shape with the horn itself, and thus giving the appearance of a much smaller pair of horns*. The mouth is furnished with extremely large and long fangs or tubular teeth, situated as in other poisonous serpents, and capable of inflicting the most severe wounds: two of these fangs appear on each side of the mouth; the hinder pair being smaller than the others. The length of this animal is about thirty-five inches. Its colour is a yellowish olive-brown, very thickly sprinkled all over with minute blackish specks: along the whole length of the back is placed a series of yellowish-brown oblong spots or marks, each of which is imbedded in a patch of black; and on each side of the body, from head to tail, runs an acutely-flexuous or zigzag line or

* It is remarkable that some of the older writers † speak of a kind of *Cerastes* with four horns, or even more: it is, therefore, not improbable that this species might have been seen by those authors.

† *Solinus, Albertus, &c.*

narrow band of an ochre-colour: this band is bounded beneath by a much deeper or blacker shade, than on the rest of the body: the belly is of a dull ochre-colour or cinereous yellow, freckled with blackish spots and markings; and besides these a number of black spots of different sizes are here and there dispersed over the whole animal. The tail is somewhat thin and short in proportion to the body. The scales of this species are harsh and stiff, and are very strongly carinated. The head is covered with small scales, and is marked on its upper part by a very large longitudinal patch of brown, running out into pointed processes at the sides, and bounded by a space of dull lead-colour or cinereous. The shape of the head is broad and flattened: the cheeks are varied with blackish and yellow marks.

The animal seems to have been taken at a period not far distant from that of casting its skin; since the exterior scales separate easily from the subjacent ones, which then appear of a clearer and lighter colour than before, the yellowish variegations on the sides approaching almost to whiteness, with dusky spots and marks.

This Snake exhibits a richness and magnificence in the pattern of its robe, which cannot be viewed without admiration, though the colours separately considered are far from brilliant; and, like those on the plumage of the Wryneck, produce their effect from the curious manner in which they are disposed and blended.

The Horn-Nose Snake is supposed to be a native of the interior parts of Africa. The specimen was obtained from the master of a Guinea vessel by the Rev. Edward Charles Jenkins, of Charles-Town, in South Carolina, by whom it was presented to the British Museum.

CROTALINE SNAKE.

Coluber Crotalinus. C. cinereus, supra maculis magnis nigricantibus alternis, subtus flavescens fusco irroratus.

Cinereus Snake, marked above with large alternate blackish spots; beneath yellow, freckled with brown.

Coluber Crotalinus. Lin. Syst. Nat. Gmel. p. 1094.

Abdominal scuta 154, subcaudal scuta 43.

THIS, says Linnæus, is a large species, with the habit of a Rattle-Snake: colour cinereous, marked above with large, alternate, blackish spots; the under parts yellowish, freckled with brown: head cordate, eyelids protuberant; tail about one seventh of the length of the body, and furnished with scutella as in other Colubri. A specimen of this Snake, in the British Museum, is about the size of the Boa Canina: the head is broad, and obtusely trigonal; the scales are carinated, and the body seems to have been banded with brown, but the specimen being much faded, the disposition of its colours cannot be very exactly determined. The number of abdominal scuta in this specimen is 150, and of subcaudal squamæ 40.

CLOTHO.

Coluber Clotho. *C. griseo-luteus, fasciis numerosis undulatis transversis nigris, subtus cinereus nigro variatus.*

Greyish-orange Snake, with numerous transverse undulated black bands, beneath ash-coloured, with black variegations.

Vipera Bitin Ceylonica elegantissima. *Seb. 2. t. 93.*

THIS appears from Seba's description and figure to be a large and richly variegated species, measuring more than six feet in length: and being pretty thick in proportion: the head is large, covered with small scales, and scarce distinguished from the body by any perceptible neck: the colour of the upper parts is a strong orange-brown, freckled with black specks, one at the tip of each scale, and marked with numerous transverse zig-zag bars of black; while about the sides are several scattered black spots of different forms and sizes: the under parts are cinereous, barred here and there by narrow transverse black stripes: the tail of moderate length, thinner than the body, and gradually tapers to the extremity. This snake is a native of Ceylon, and is supposed to be a poisonous species.

LACHESIS.

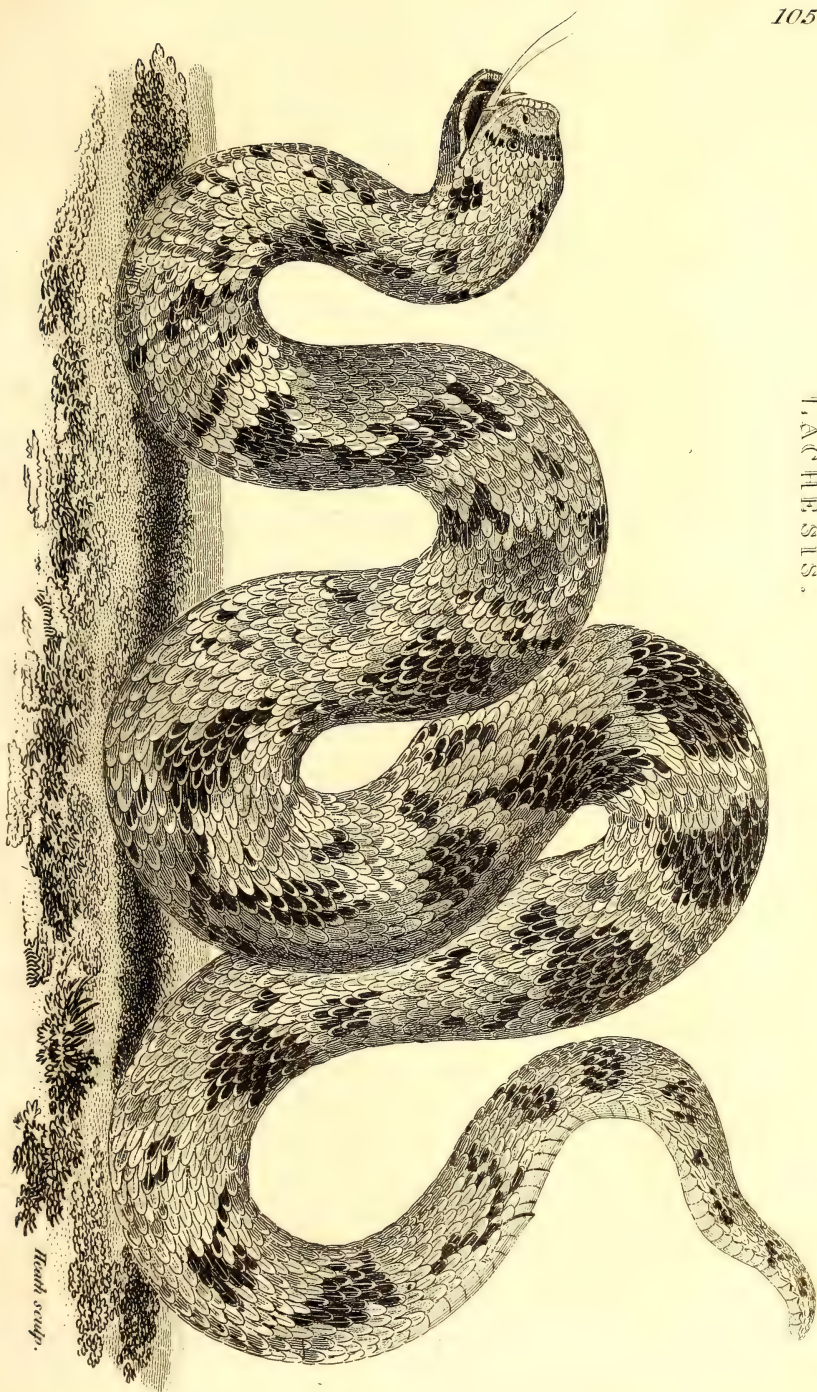
Coluber Lachesis. *C. griseo-flavescens, fusco variatus, squamis laxis carinatis, capite indistincto, cauda brevi.*

Yellowish-grey Snake, variegated with brown, with loose carinated scales, indistinct head, and short tail.

Serpens Ceilonica *Bitin* dicta. *Seb. 2. t. 94. f. 2.*

THIS remarkable snake is figured and slightly described by Seba, who informs us that it is a native of the island of Ceylon, where it is known by the name of *Bitin*. Its colour is a rich and somewhat irregular variegation of deep and light brown, disposed in the form of streaks and patches on a yellowish-grey ground: the scales, which in many parts are tipped with white, are large, strongly carinated, and fixed only at the base, while the remainder is loose or free: in consequence of this disposition of the scales, the animal, while moving, is said to make a kind of rustling sound, by elevating and depressing them, and even sometimes shaking off such as happen to be in any degree loose: the scuta or under scales are broad, of a pale colour, and marked by numerous, small, irregular, dusky, or blackish spots. It is a poisonous species, being armed with large fangs, and, from its general form and proportions, appears to be an animal of very considerable strength: the head is not distinguished in size from the body by any appearance of neck or contraction: the male is deeper coloured than the female, and seems to have a larger body and

TACHESIS.



Head sculp.





Head, sculp.

LACHESIS var.?

a more slender tail. The general length of this snake seems to be about four or five feet, and the tail is short in proportion to the body. It does not appear to have been known to Linnæus, who, relying on his specific characters taken from the number of scuta and squamæ, seems to have neglected almost every species, however remarkable, described or figured by other authors, where those particulars could not be ascertained.

VAR. ?

Seb. 2. t. 30.

THIS is probably a variety of the preceding, from which it differs in being of a somewhat shorter form in proportion, with the tail remarkably short, thick, and suddenly tapering to an obtuse point. Its variegations are very nearly similar to those of the former.

There can be no occasion to warn the scientific reader, that as the two preceding species are described merely from their general appearance, the specific characters annexed must, of course, be received with some degree of latitude.

ATROPOS.

Coluber Atropos. *C. canus maculis rotundis magnis fuscis albo marginatis in serie quadruplici dispositis.*

Grey Snake, with a quadruple series of large round brown spots with white margins.

Coluber Atropos. *Lin. Syst. Nat. p. 275.*

Abdominal scuta 131, subcaudal squamæ 22.

THIS is a species of a thick and short form, scarcely exceeding fifteen or sixteen inches in length: the head is large and viperine, marked with four or five large dusky spots, and covered with small scales: the remainder of the animal is pale brown, marked all along the upper part by four* rows of very large, alternate, round, black spots bordered with white: the abdomen is ash-coloured: the tail very short, measuring about a ninth part of the whole length: the scales on all the upper parts are of a slightly sharpened form, and carinated. It is a native of America, and is considered as an extremely poisonous serpent. From its remarkable pattern, and the size of its spots, it is a species very easily distinguished.

* In a beautiful specimen in the Leverian Museum there seem to be only three rows of spots.

ALECTO.

Coluber Alecto. *C. albidus, dorso maculis reticulatis rhombeatis fuscis, capite cordato ferrugineo, stria laterali nigra.*

Whitish Snake, with reticular rhomboid brown spots along the back, and cordated ferruginous head with a black lateral stripe.

Coluber Ceilonicus, longissimus, perniciosus, torvus Amodytes dictus. *Seb. 2. p. 79. t. 76. f. 1.*

A LARGE snake: length about five feet and a half: habit rather slender than thick: head very large, flattish, cordated at the back part, of a pale ferruginous colour speckled with black, and marked on each side by a descending black streak from the eye to the hind-head: remainder of the animal very pale or whitish grey, marked throughout the whole length of the back by a series of large, transverse, rhomboid, reticular patches of brown, the points of which descend on the sides so as almost to reach the abdominal scuta: tail rather short, gradually tapering, and terminating in a horny pointed extremity. Native of Ceylon: said to be a poisonous species.

VAR. ?

SEBA figures a much smaller snake, of about three feet long, white, with a tinge of blossom-colour, and marked above as in the former, of which it may, perhaps, be a younger specimen; the differences being not so great as entirely to

forbid this supposition. It is said to be a native of Africa. See Seb. 2. pl. 82. f. 2.

TISIPHONE.

Coluber Tisiphone. *C. fuscus immaculatus, corpore crasso.*

Brown thick-bodied Snake, without any variegations.

Brown Viper. *Catesb. Carol. 2. pl. 45.*

THIS, says Catesby, is of the size of the Black Viper (American), measuring about two feet in length, and large in proportion: it is also a very slow-moving and sluggish reptile, advancing deliberately, even to escape danger: yet will defend itself with much fierceness when attacked, and its bite is said to be as venomous as any: it retains its brown colour, in all stages of life: it is found in Virginia, and Carolina, in the last of which it is called the Truncheon Snake: it preys on Lizards and other animals.

MEGAERA.

Coluber Megæra. *C. fuscus, flavo variatus, capite cordato depresso, foramine utrinque magno inter oculos & nares.*

Brown Snake, with yellow variegations, flat cordate head, and a large orifice on each side between the eyes and nostrils.

La Vipere Fer-de-Lance. *Cepede Serp. p. 121. pl. 5.*

Abdominal scuta 224, subcaudal squamæ 68.

THIS is a large species, measuring, when full-grown, five or six feet, or even more, in length.

It is a native of the island of Martinico, and some of the neighbouring islands, and may justly be considered as one of the most formidable of the Transatlantic Serpents. The Count de Ceppe very properly observes, that the name of Yellow Martinico Snake, by which it is generally called in the works of voyagers, is highly improper, since yellow is often not the predominating colour: that of a fine specimen in the British Museum is a rich deep brown, with yellow variegations; the back being marked throughout the whole length of the animal by pretty numerous, equidistant, broken, and slightly alternating bars of dull yellow, which, descending and joining at intervals with the neighbouring ones, form obscurely annular and somewhat irregular markings of similar colour along the sides, with still more obscure crossings on the part nearest the scuta, intermixed with smaller patches and spots: the abdomen is dull yellow, clouded and speckled on the sides with pale brown: the head is large, flat, cordate, and covered with very small carinated scales; but the terminal scale of the nose, and those at the sides of the mouth, are very large: above each eye is also a very large scale: the nostrils are small, and between them and the eyes on each side is a large orifice, the use of which is perhaps not distinctly understood, but which has been regarded as a passage to the organ of hearing: the scales on the whole upper parts of the body are moderately large, ovate, and carinated, the back slightly elevated, the sides rather sloping,

and the abdomen flattish : the total length of the individual now described, in the British Museum, is something more than five feet, the body being of moderate thickness in proportion : the tail measures eight inches, and gradually tapers to the extremity, which is terminated by a small callous or horny point of about the eighth of an inch in length.

That this is a most formidable serpent, appears from the large size of the fangs, which are of the usual curved form, and measure near three quarters of an inch in length. The poison is said to resemble in appearance that of most other serpents, being a clear yellowish fluid, like olive oil : the symptoms produced by the bite are such as follow from that of the Viper, but in a much stronger degree : when preparing to bite it is said to throw itself into a spiral form, and to spring with great rapidity on its victim ; but at other times to be rather slow of motion, and of a torpid or indolent nature, concealing itself beneath various vegetables, or within the hollows of trees, &c. and even sometimes in cavities under ground : it is said to frequent sugar plantations, for the sake of the rats, which abound in such situations ; it also preys on birds, &c. the female is reported to go six months with young, which she produces in the months of August and September, perfectly formed, like those of the Viper, and very numerous, amounting to twenty, forty, and even, according to some accounts, as many as sixty : they are observed to vary in colour, some of the same

*M. G. S. P.*

SPECTACLE SNAKE.

brood being yellow, others grey, and others of mixed colours: it is probable, however, that the colour of the full-grown animal is always similar to that of the individual above described.

The Count de Cepede, in his History of Serpents, gives this species the title of *Fer de Lance*, from a fancied resemblance between the shape of the flat subtriangular space on the middle of the head to that of a spear-head or halbert. The number of scuta in the small specimen described by that author was 228, and of subcaudal squamæ 61 pair. In the British Museum specimen above-described, the number of the former is 224, and of the latter 68.

SPECTACLE SNAKE.

Coluber Naja. *C. ferrugineo-flavescens, collo supra macula magna conspicillata albo nigroque varia notato.*

Ferruginous-yellow Snake, with the neck marked above by a large black and white spectacle-shaped spot.

Coluber Naja. *Lin. Syst. Nat. p. 382.*

Serpens Malabarica Cobra de Capello dicta. *Seb. 2. t. 94. f. 2.*

Serpens Indicus Noja dictus, &c. *Seb. 2. t. 97.*

Abdominal scuta 193, subcaudal squamæ 60.

THE Coluber Naja, or Cobra de Capello, is a native of India, where it appears to be one of the most common, as well as most noxious, of the Serpent tribe; very frequently proving fatal, in the space of a few minutes, to those who unfortunately experience its bite. Its remarkable form

and colours are such as to distinguish it with great ease from almost every other snake. Its general length seems to be three or four feet, and the diameter of the body about an inch and quarter: the head is rather small than large, and is covered on the fore part with large smooth scales; resembling, in this respect, the majority of innoxious serpents: the back part, sides, and neck, with smaller ovate scales; and the remainder of the animal, on the upper parts, with small, distinct, oblong-oval scales, not ill resembling the general form of a grain of rice. At a small distance beyond the head is a lateral swelling or dilatation of the skin, which is continued to the distance of about four inches downwards, where the outline gradually sinks into the cylindric form of the rest of the body. This part is extensible, at the pleasure of the animal; and when viewed from above, while in its most extended state, is of a somewhat cordated form, or wider at the upper than the lower part: it is marked above by a very large and conspicuous patch or spot, greatly resembling the figure of a pair of spectacles; the mark itself being white with black edges, and the middle of each of the rounded parts black. This mark is more or less distinct in different individuals, and also varies occasionally in size and form, and in some is even altogether wanting. The usual colour of the animal is a pale ferruginous brown above; the under parts being of a blueish white, sometimes slightly

tinged with pale brown, or yellow: the tail, which is of moderate length, tapers gradually, and terminates in a slender, sharp-pointed extremity.

This formidable reptile has obtained its Portuguese title of *Cobra de Capello* or *hooded snake* from the appearance which it presents when viewed in front in an irritated state, or when preparing to bite; at which time it bends the head rather downwards, and seems hooded, as it were, in some degree, by the expanded skin of the neck. In India it is every where exhibited publicly as a show, and is, of course, more universally known in that country than almost any other of the race of reptiles. It is carried about in a covered basket, and so managed by its proprietors as to assume, when exhibited, a kind of dancing motion; raising itself up on its lower part, and alternately moving its head and body from side to side for some minutes, to the sound of some musical instrument which is played during the time. The Indian jugglers, who thus exhibit the animal, first deprive it of its fangs, by which means they are secured from the danger of its bite.

Dr. Russel, in his account of experiments made in India with this serpent, observes, that, as a general standard for a comparison of the effect of its bite with that of other poisonous serpents, he never knew it prove mortal to a dog in less than twenty-seven minutes, and to a chicken in less than half a minute. Thus, fatal as it is, its poison seems not so speedy in operation as that of

the Rattle-Snake, which has been known to kill a dog in the space of two minutes.

In the month of June, 1787, a dog bitten by a Cobra de Capello on the inside of the thigh, howled at first, as if in severe pain : after two or three minutes he lay down, continuing to howl and moan : after twenty minutes he rose, but with much difficulty, being unable to walk, and his whole frame appeared greatly disordered. He soon lay down again, and in a few minutes was seized with convulsions, in which he expired, twenty-seven minutes after the bite.

A large and very stout dog was bitten by another Cobra de Capello on the inside of the thigh, which, in a minute or two, was drawn up, which is, in general, the first symptom of the poison having taken effect. He continued, however, nearly an hour longer, walking on the three remaining legs, seeming not otherwise disordered ; but after this time, he laid himself along, in great inquietude, his head and throat being convulsed in an uncommon degree ; he made several vain efforts to rise ; his legs became both paralytic, and after continuing in this state near an hour, he expired.

Nov. 11th, a large dog was bitten by a Cobra de Capello which had been captive only two days. He complained a good deal at the instant of the bite, and the leg was drawn up soon. In twenty-five minutes he was seized with convulsions, succeeded by stupor, in which state he lay for ten minutes : the convulsions, however, returned, and

he expired in a quarter of an hour ; being fifty-six minutes after the bite.

Aug. 9th, a Cobra de Capello, which had lost his two longest fangs, but retained two of the second order, was made to bite a very large stout dog. At first the dog complained loudly, though without drawing up the thigh, or shewing any other symptom of poison : but, happening at this time to break loose, he was pursued, and, after a chase of an hour and a half, was brought back, much fatigued and heated. After resting a quarter of an hour, water was offered to him, which was refused, though he eat some morsels of bread thrown into it. About a quarter of an hour afterwards he became much disturbed, grew entirely outrageous, howling violently, snapping at and gnawing the stake to which he was tied with incredible ferocity. This continued about three hours, when, growing faint, his howlings grew weaker, his convulsions increased, and he expired in about four hours after the bite.

A pig, bitten by a snake of this kind, which had been kept for more than six weeks, and fed only once in seven days with milk, became greatly disordered in twenty minutes, and expired in less than an hour,

A chicken, bitten by a Cobra de Capello, has been sometimes known to survive two hours.

Aug. 17, 1788, an attempt was made to make a Cobra de Capello bite another (of the variety called *Nooni Paragoodo*) in the tail, but that part being found too small, the belly was bitten, a little

above the vent. The bitten snake soon lost its former activity, and, when put under a glass, coiled itself up. In this state it was left, and after an hour and a quarter was found dead. On opening the belly, the parts immediately beneath the bite appeared much inflamed, though it could not be discovered whether the fangs had penetrated into the cavity.

A Cobra de Capello, received by Dr. Russel from Ganjam, under the name of *Saltanag*, was made to bite another remarkably large Cobra, brought from the same place, under the name of *Coultiah*. The poison was shed on the place, but no marks of fangs could be perceived, and the *Coultiah* remained as well as before: this experiment was repeated with the same result, though a little blood as well as poison was found on the part bitten.

Some days after this, a Cobra de Capello (of the variety called *Coodum Nagoo*) was made to bite the *Coultiah* on the belly: both fangs visibly acted: blood appeared on the wound, but no other consequence followed. A *Tar Tutta*, bitten immediately after in the same manner, died within two hours.

Chickens and pigeons, bitten by a Cobra de Capello, whose fangs had been eradicated, suffered no symptoms of poison; but when poison, taken from the same snake, was inserted into their bodies, either by incision or puncture, they suffered the usual symptoms, and very often died.

The principal Indian varieties of this fatal snake are thus enumerated by Dr. Russel.

1. *Arege Nagoo*. With a pale central spot in the middle of each of the black spots of the spectacle-shaped mark.—*Abdominal scuta* 189, *subcaudal scales* 60.
2. *Coodum Nagoo*. This variety is darker than the others, and the skin of a yellower cast; but the principal distinction is in the spectacle-mark, which consists of an oblong curved frame without the usual black eyes or centre-spots of the others.—*Abdominal scuta* 187, *subcaudal scales* 57.
3. *Sankoo Nagoo*. The chief distinction of this is a plain hood, without any mark. This variety is supposed by Seba to be the female of the species; but Dr. Russel informs us that one which he brought home from India, and presented to Mr. John Hunter, was a male, and that the usual spectacle-shaped mark is found indifferently both on males and females. This variety is rarer than the rest.—*Abdominal scuta* 183, *subcaudal scales* 56.
4. *Mogla Nagoo*. The cervical scuta in this variety are spotted here and there with faint greyish spots, and four of the middle ones are entirely of a blueish grey.—*Abdominal scuta* 192, *subcaudal scales* 65.
5. *Malle Nagoo*. The colour of this variety is of a lighter brown than the rest, and the scuta whiter and less spotted, but seven of

the pectoral ones are completely dark.—
Abdominal scuta 191, *subcaudal scales* 62.

6. *Cumboo Nagoo*. In this some deviations were observable in the shape of the laminæ: all the cervical scuta were dusky, and the trunk had a strong blueish cast.—*Abdominal scuta* 186, *subcaudal squamæ* 60.
7. *Jonna Nagoo*. The skin of the hood in this is tinged with orange colour; the scuta of the neck spotted with grey, and six of the lower ones wholly of a blue-grey.—*Abdominal scuta* 189, *subcaudal squamæ* 57.
8. *Nella Tas Pam*. With the black on the hood unusually deep, and all the jugular scuta remarkably dusky.—*Abdominal scuta* 186, *subcaudal squamæ* 62.
9. *Kistna Nagoo*. The middle lamina of the three between the eyes remarkably broad, and the posterior pair subovate instead of semi-cordate: five of the jugular scuta dusky, and six of the pectoral almost black.—*Abdominal scuta* 186, *subcaudal squamæ* 63.
10. *Korie Nagoo*. The three laminæ between the eyes remarkably narrow; the large posterior pair oval; colour of the trunk, and still more of the scuta, unusually blueish.—*Abdominal scuta* 184, *subcaudal squamæ* 57.

AMERICAN VARIETIES?

IF Seba be in the right, either the Cobra de Capello, or a species nearly allied to it, occurs in some parts of South America. He describes and figures one from *Peru*, which, in its general aspect, resembles the Indian, but has the neck not apparently of greater diameter than the body: it is marked with the spectacular patch, as in that kind, the whole area of the hood being dusky or brown; and a collar of the same colour at a small distance beneath: the colour of the rest of the animal rufous grey, with slight whitish variegations. Another kind is from *Brasil*, and is represented as of smaller size than usual (perhaps a half-grown animal), and of a ferruginous colour, with several dusky bands round the upper part of the body: the hood or dilated part marked with a pale or blueish-grey spectacle mark, with two black spots on each limb, one above the other. These Snakes the Count de Ceperde is willing to consider as distinct species, under the titles of the *Peruvian* and *Brasilian* Naja. But perhaps Seba may have been mistaken in supposing them American.

Reflecting on these and other horrid natives of the hotter regions of the globe, we cannot but join in the sentiment of Linnæus, congratulating ourselves on our own happy state of security; and may well be willing to prefer the rigours of a northern winter, with a temporary loss of vegetation, to the

continued warmth of climate, and ever-blooming verdure which distinguish the beautiful regions of both the Indies, where, alas! the incautious traveller may meet with sudden fate in the midst of the most enchanting scenes which nature can display.

RUSSELIAN SNAKE.

Coluber Russelii. C. fusco-flavescens, maculis dorsalibus ovato-acuminatis nigricantibus albo marginatis, lateralibus minoribus ovatis.

Brownish-yellow Snake, with acutely-ovate blackish dorsal spots edged with white, and smaller ovate lateral ones.

Katuka Rekula Poda. *Russ. Ind. Serp. p. 10. pl. 7.*

Abdominal scuta 168, subcaudal squamæ 59.

THE length of this remarkable snake is about four feet: the colour an elegant pale yellowish brown, marked throughout the whole length of the back with a continued chain or series of large rhomboid, or rather oval, spots of deep brown, with paler middles, and narrow white edges: in some parts these spots are nearly confluent, as shewn in the figure: on each side of the body is a row of brown oval spots, smaller than those on the back; and, besides these, a few still smaller transverse marks are scattered here and there on the sides: the under part of the body is white, with a few dusky spots: the head is rather large; the snout obtuse; the mouth wide, the fangs large, and, as in several other poisonous serpents,



Heath Sculp.

double; a smaller fang being situated close to the larger one on each side *.

Dr. Russel, in his work on Indian Serpents, informs us that this species is scarce less common in India than the Coluber Naja, or Cobra de Capello; but from its not being carried about like that and some other snakes as a public show, is not so universally known either among the natives or Europeans. Its bite, according to Dr. Russel's experiments, proved fatal to chickens in thirty-eight seconds, and to a dog in twenty-six minutes.

The particulars of the experiments made on this subject are as follows:

A chicken bitten in the pinion by a *Katuka Rekula Poda*, which had been caught two or three days before, and seemed in high spirits, was instantly infected, seized with convulsions, and expired in thirty-eight seconds.

Immediately after the chicken, a stout dog was bitten in the thigh. Within less than five minutes he appeared stupified; the thigh was drawn up, and he frequently moved it as if in pain. He remained, however, standing, and eat some bread that was offered to him. In about ten minutes the thigh became paralytic: in fifteen minutes he entirely lost the use of the wounded thigh, and lay down, howling in a dismal man-

* In most venomous serpents there are two or three, or even more, small fangs, situated near the large ones; as if to supply their place when lost.

ner, frequently licking the wound, and making, at intervals, ineffectual attempts to rise. In nineteen minutes, after a short cessation, he again began to howl; moaned often; his breathing became laborious, and the jaws were completely shut. The few succeeding minutes were passed alternately in agony and stupor; and in twenty-six minutes after the bite he expired.

A second dog, of much smaller size, was next bitten, and expired in the space of six hours.

A rabbit was next exposed to the bite, and died in less than an hour.

After this a chicken was bitten in the pinion, and expired in less than six minutes.

All the above experiments were made with the same snake in the course of the same morning. It appears, therefore, that this species must be numbered among the most poisonous of the whole tribe.

GRASS-GREEN SNAKE.

Coluber Gramineus. *C. viridis, subtus flavescens, abdominis margine viridi maculato.*

Green Snake, yellowish beneath, with the edges of the abdomen spotted with green.

Boodroo Pam. *Russel Ind. Serp. p. 13. pl. 9.*

Abdominal scuta 170, subcaudal scales 58 pair.

NEARLY allied, in general appearance, to the *C. mycterizans*, *nasutus*, and *purpurascens*, but having a larger head in proportion, and an ob-

tusely tapering, but by no means pointed, snout; the head is also covered on all parts by very small scales: colour of the whole upper parts fine grass green; of the under parts pale yellow, the edges of the abdomen marked by a row of faint green spots: length about two feet and a half; tail about five inches, gradually tapering to the extremity: native of India: described by Dr. Russel: a poisonous species: fangs remarkably long and slender. From Dr. Russel's experiments it appears that a chicken died, after having suffered strong convulsions, and afterwards stupor, in about eight minutes from the bite: pigs and dogs were seized with stupor, convulsions, &c. but in the space of a few hours recovered from the effect of the poison.

SEVERE SNAKE.

Coluber Severus. *C. cinereus, fasciis obliquis linearibus albidis fusco marginatis.*

Cinereous Snake, with oblique linear whitish bands edged with brown.

Coluber Severus. *Lin. Syst. Nat. p. 379.*

Vipera Japonica literas inscripta. *Seb. 2. t. 54. f. 4. ?*

Abdominal scuta 170, subcaudal squamæ 42.

A RATHER small species, growing to the length of about a foot and half, and being of moderate thickness: head broad, obtuse, livid, with a cinereous band between the eyes and behind the nostrils: eyes large; neck thick; colour of the upper parts cinereous, with whitish, narrow, transverse

bands directed obliquely forwards, and slightly edged with brown: abdomen dusky; sides speckled with white: tail short. This species seems to vary in colour, since in the Gmelinian edition of the *Systema Naturæ* the abdomen is said to be whitish. The Seban figure quoted by Linnæus in the *Systema Naturæ*, is described by the author as of a pale rufous colour, with yellowish bands somewhat resembling Hebrew characters in form, and edged with brown: the abdomen pale yellow, with a row of blackish spots on each side.

BULL-HEADED SNAKE.

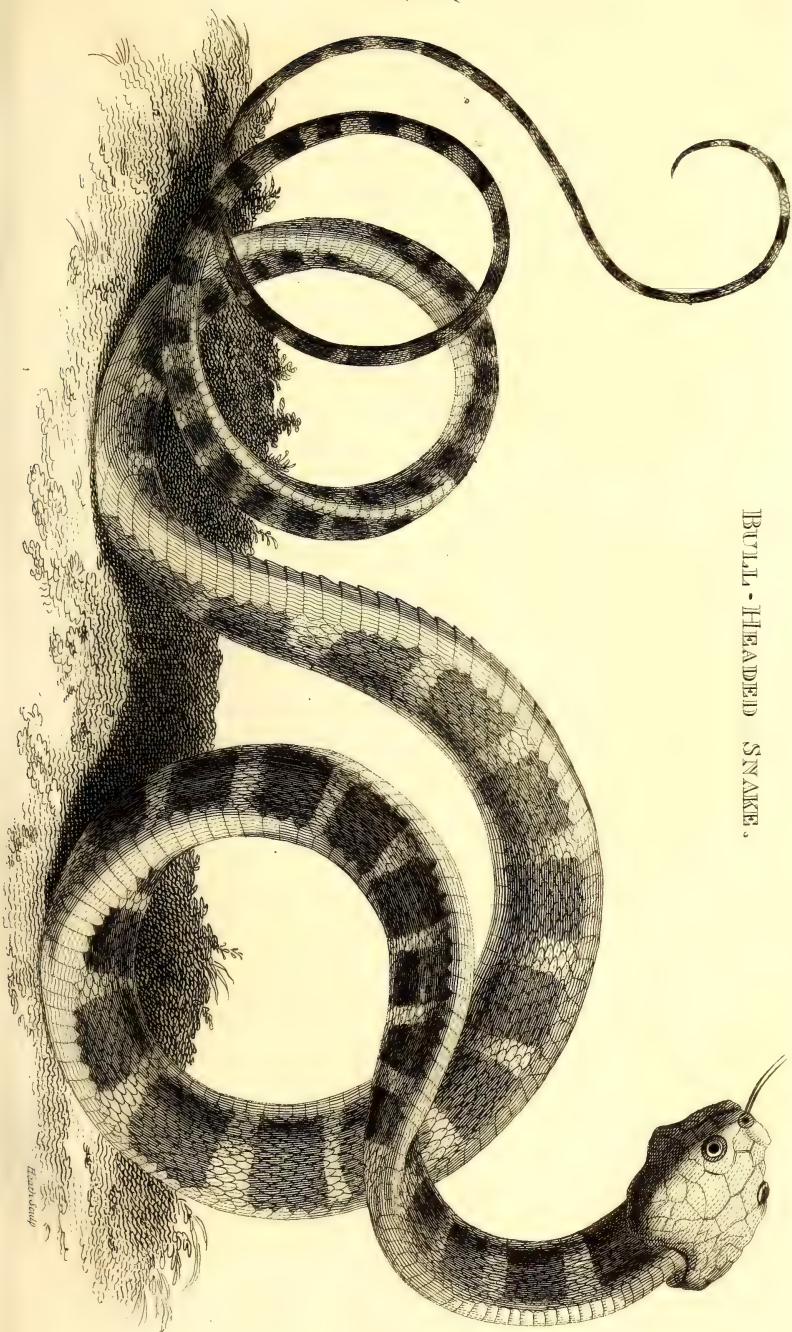
Coluber Bucephalus. C. subfuscus, albido transversim fasciatus, capite magno, cordato, depresso, corpore compresso, cauda tenuissima.

Brownish Snake, with transverse whitish bars, large cordated depressed head, compressed body, and very thin tail.

Serpens Lusitanis Cobra de Capello dicta. Seb. 1. t. 43. f. 4.

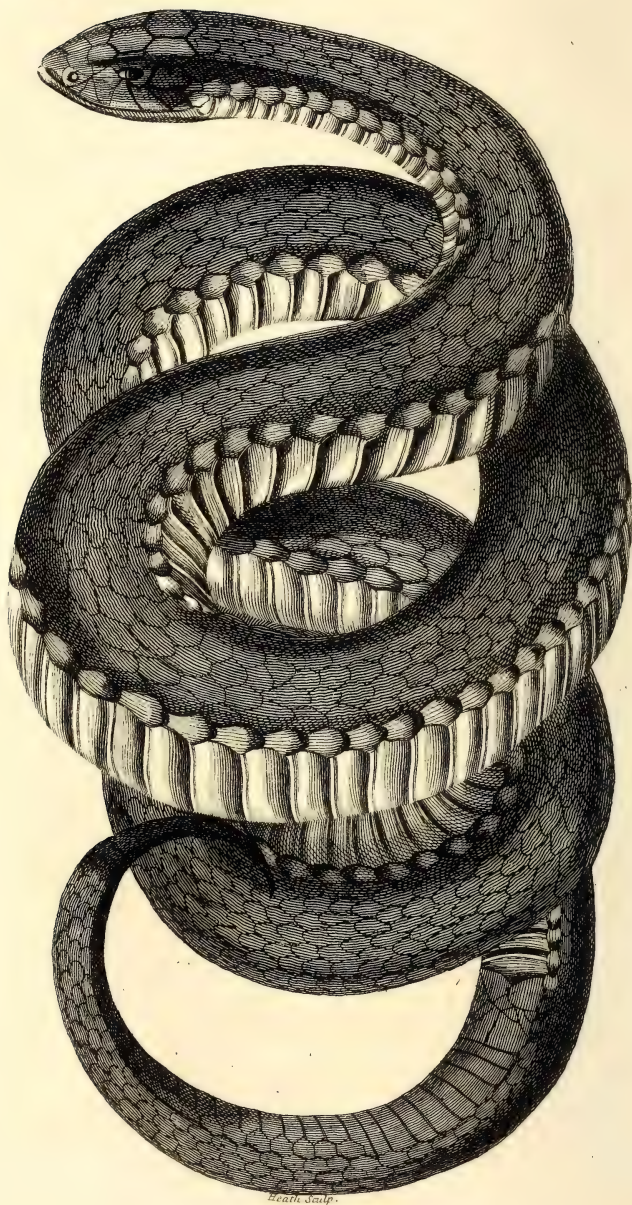
A VERY singular species: length about four feet and a half: head extremely large, depressed, cordate behind, and somewhat compressed on the sides of the mouth; covered above by very large scaly plates: at some distance from the eyes are two remarkable, oblong, brown spots: neck thin, and, together with the whole body, extremely compressed on the sides: tail long, round, and tapering to a fine point: from the head along the back runs a row of large, broad, hexagonal scales; those on the other parts being ovate: abdominal

BULL-HEADED SNAKE,





CRIMSON - SIDED SNAKE.



scuta very narrow: colour of the whole animal rufous brown, with moderately distant, broadish, transverse, pale bands, each of which, at its juncture with the scuta, is marked by a white spot. Native of Ceylon according to Seba, who improperly calls it a kind of Cobra de Capello. It is uncertain whether it be a poisonous species or not, but it bears a highly malignant aspect.

CRIMSON-SIDED SNAKE.

Coluber Porphyriacus. C. nigro-violaceus, lateribus abdomineque purpureis, scutis nigro marginatis.

Violet-black Snake, with the abdomen and sides crimson; the scuta margined with black.

Coluber Porphyriacus. Zool. of New Holl. p. 27. pl. 10.

Abdominal scuta 188, anal scuta 7, subcaudal squamæ 45.

A MODERATELY large, and highly beautiful species: general proportions nearly the same with those of the *Col. Natrix*, or common English Snake: head rather small, and covered in front with large scales: colour of the head and whole upper parts very fine deep violet: sides and abdomen crimson, deepest on the former, the large scales nearest the scuta being carmine-coloured, with black tips: the abdomen rose-coloured, with a tinge of yellow, each scutum deeply edged with black; thus forming a beautiful series of transverse black bars down the abdomen: the tail measures about a sixth of the whole length, and is furnished beneath, exclusive of the divided

subcaudal scales, with about seven scuta or undivided lamellæ, commencing immediately beyond the vent, which is edged with several smaller squamæ: the colour of the under part of the tail is a blueish ash, the rose-colour of the abdomen ceasing at the commencement of the tail.

I must here apologize for an inaccuracy in the description of this Snake in the Zoology of New Holland, where it is mentioned as destitute of fangs, and consequently innoxious; the specimen then examined having been somewhat mutilated: others, however, which have been since received, are found to be furnished with those organs, and the animal is even said to be highly dreaded by the natives of Australasia. It furnishes an additional example of a poisonous snake with the head covered with large scales in front, and thus resembling the major part of the innoxious serpents. I must also add, that the figure in the Zoology of New Holland, though accurate in all other particulars, yet represents the animal somewhat too thick in proportion to its length; a fault which is amended in the representation given in the present work.



WATER-VIPER.



Head vulp.

HÆMACHATE SNAKE.

Coluber Hæmachates. *C. ruber, albo nebulatus, abdomine albo-flavescente.*

Red Snake, clouded with white, with yellowish white abdomen.

Serpens Asiatica Hæmachates dicta. *Seb. 2. t. 58. fig. 1, 3.*

L'Hæmachate. *Cepede Serp. p. 115. pl. 3. f. 2.*

Abdominal scuta 132, subcaudal scales 43 pair.

AN elegant species; well represented by Seba, who informs us that it is a native of the East Indies, having been received from Persia and Japan. Its general length is about two feet or more; its colour red, more or less deep in different individuals, and sometimes of a brownish cast; variegated with white or whitish undulations, so as to appear as if marbled: under parts yellow or whitish: head moderately large, and covered in front with large scales: tail extremely short, tapering to a point. It is, according to Cepede, a poisonous species.

 WATER VIPER.

Coluber Aquaticus. *C. fuscus, abdomine nigro flavoque fasciato.*
Brown Snake, with the abdomen banded with black and yellow.

Water Viper. *Catesb. Carol. 2. pl. 43.*

“THIS serpent,” says Catesby, “is called in Carolina the Water Rattle-Snake; not that it hath a rattle, but is a large snake, and coloured not

much unlike the Rattle-Snake, and the bite said to be as mortal. This Snake frequents the water, and is never seen at any great distance from it: the back and head are brown; the belly transversely marked with black and yellow alternately, as are the sides of the neck: the neck is small, the head large, and armed with the like destructive weapons as the Rattle-Snake: it is very nimble, and particularly dextrous in catching fish. In summer great numbers are seen lying on the branches of trees hanging over rivers, from which at the approach of a boat they drop down into the water, and often into the boat, on the men's heads: they lie in this manner to surprise either birds or fish, after which last they plunge, and pursue them with great swiftness, and catch some of a large size, which they carry on shore and swallow whole. One of these I surprised swimming ashore with a large cat-fish in its mouth. The tail is small towards the end, and terminates in a blunt horny point about half an inch in length, and which, though harmless, is considered as of dreadful efficacy by the credulous vulgar, who believe that the animal is able, with this weapon, not only to kill men and other animals, but even to destroy a tree by wounding it with it; the tree withering, turning black, and dying."

WHITE SNAKE.

Coluber Niveus. *C. totus albus immaculatus.*

Snake entirely white, without any variegations.

Coluber niveus. *Lin. Syst. Nat. p. 334.*

Abdominal scuta 209, subcaudal squamæ 62.

OBSERVED by Linnæus in the Museum of De-geer: colour entirely white, without any spots: said to be a native of Africa, and a poisonous species. Linnæus, in the Systema Naturæ, refers to the fifteenth plate of Seba's second volume, which represents a moderately large snake of a white colour, with a few distant, small oblong black specks on the upper parts of the body, and which is rather supposed by Mr. Merrem to be a variety of the Coluber pullatus.

MILK-WHITE SNAKE.

Coluber Lacteus. *C. albus, dorso maculis atris geminatis, vertice atro linea longitudinali alba.*

White Snake, with the back marked by double black spots; the head black with a longitudinal white line.

Coluber Lacteus. *Lin. Syst. Nat. p. 381.*

Abdominal scuta 203, subcaudal squamæ 32.

LENGTH of the specimen described by Linnæus about a foot and half: diameter scarcely that of a finger: head ovate, with the top black, marked by a longitudinal white line: eyes small: throat white: trunk cylindric, white, marked with

double black confluent spots of considerable size: abdomen livid or brownish: tail a ninth part of the whole length, and slightly tapering. Linnæus observes that this species has somewhat the habit of the *Anguis Scytale*. Native of India and South America, and said to be poisonous.

BROAD-CHEEKED SNAKE.

Coluber Buccatus. C. albidus maculis magnis dorsalibus duplicatis fuscis, capite subdepresso, genis tumidis.

Whitish Snake, with large double brown dorsal spots, subdepressed head, and tumid cheeks.

Coluber Buccatus. Lin. Syst. Nat. p. 377.

Abdominal scuta 107, subcaudal scales 72.

A SMALL species; the specimen described by Linnæus measuring about a foot in length: head large, very thick on the sides, flattish, white, and marked by a trigonal dusky spot over the snout, and by a dusky line reaching to the eye on each side: trunk white or whitish, marked all along the back by a double row of very broad brown spots, which almost fill the whole space of the skin: tail rather slender; measuring about a fourth of the whole: native of South America and of India: a poisonous species.

FIERCE SNAKE.

Coluber Atrox. *C. griseus, fasciis transversis linearibus albidis, abdomine fusco albo transversim variato.*

Grey-brown Snake, with transverse linear whitish stripes, and dusky abdomen with white transverse variegations.

Coluber Atrox. *Lin. Syst. Nat. p. 388. Mus. Ad. Frid. p. 33. t. 22. f. 2.*

Abdominal scuta 196, subcaudal scales 69.

THIS, according to Linnæus, is a small species, measuring about a foot and a half in length, and of a grey colour, marbled beneath with transverse alternate deep brown spots: the head is depressed, compressed, and covered with very small scales, which, as well as the larger ones on the rest of the animal, are carinated. In the *Museum Adolphi Friderici*, p. 33. this species is, by a mistake, inscribed *angulatus*, while the figure, on plate 22 of that work, represents the body marked by several distant, narrow, transverse whitish bands reaching to the abdomen, which is spotted with small, round, white specks: the dusky transverse spots appearing only beneath the tail: the general colour of the abdomen, however, in this snake is rather deep brown or blackish, beautifully variegated or marbled by numerous narrow transverse bands, accompanied here and there with small spots: the tail is remarkably short and slender. In the *Systema Naturæ* a mistaken reference appears to be made to a figure in Seba representing a very different species. The *C. atrox* is a poisonous snake, and is a native of the island of Ceylon.

SHORT-HEADED SNAKE.

Coluber Breviceps. *C. capite brevi, corpore vario.*

Snake with short head and variegated body.

Cobra, s. Vipera de Neustria, coronata, Ceilonica : fœmina.

Seb. 2. t. 46. f. 2.

Serpens Porphyrius Brasiliensis. *Seb.* 1. t. 85. f. 1.

THIS, from the description and figures of Seba, appears to be a highly elegant species, but seems to vary considerably in its colours ; one specimen being of a blueish grey, with large patches of rufous brown, accompanied by smaller spots of similar colour ; while the abdomen is of a pale ferruginous cast, without any spots or variegations. The other specimen (for both appear evidently to belong to the same species, though described as different ones by the author) is pale yellow, with large patches and variegations of black, beautifully intermixed with red and white specks, the abdomen being marked by numerous transverse bars of red and white, the scuta appearing edged with black : the head is large, short, obtuse, slightly cordate, covered with moderately large scales, and elegantly variegated with small spots and marks of red, black, &c. ; the neck and body are thick ; the tail short, and tapering to the tip : the whole animal has an appearance, in some degree, resembling that of a Viper, though very different in its colours, and thicker in proportion to its length, which is about two feet ; the first described specimen is, according to Seba, a native of Ceylon, the other of Brasil.

SILVER-EYED SNAKE.

Coluber Melanis. *C. ater, lateribus subcæruleo nebulosis, iridibus fuscis, margine pupillari argentea.*

Deep-black Snake, with the sides clouded with blueish, the eyes brown, with the edge of the pupil silvery.

Coluber Melanis. *Lin. Syst. Nat. Gmel. p. 1087. Pall. it. 1. p. 460.*

Abdominal scuta 148, subcaudal scales 27.

A SIBERIAN species, and found about the borders of the Volga and the Samara, where it was observed by Dr. Pallas. It has a general resemblance to the Viper, but differs in colour, being of a deep black on the back, of a steely lustre beneath, marked with patches of a deeper cast, while along the sides are dispersed a kind of clouds or spots of a blueish colour: the eyes are of a bright white, with perpendicular pupils, and ferruginous irides: the tail is short, and gradually tapers to the tip: upon the whole, it may well be doubted whether this be any thing more than a variety of the common Viper.

CORALLINE SNAKE.

Coluber Corallinus. *C. glaucus, squamis subcordatis, supra lineis tribus longitudinalibus fuscis.*

Glaucous Snake, with subcordated scales, and three brown lines down the back.

Coluber Corallinus. *Lin. Syst. Nat. p. 384.*

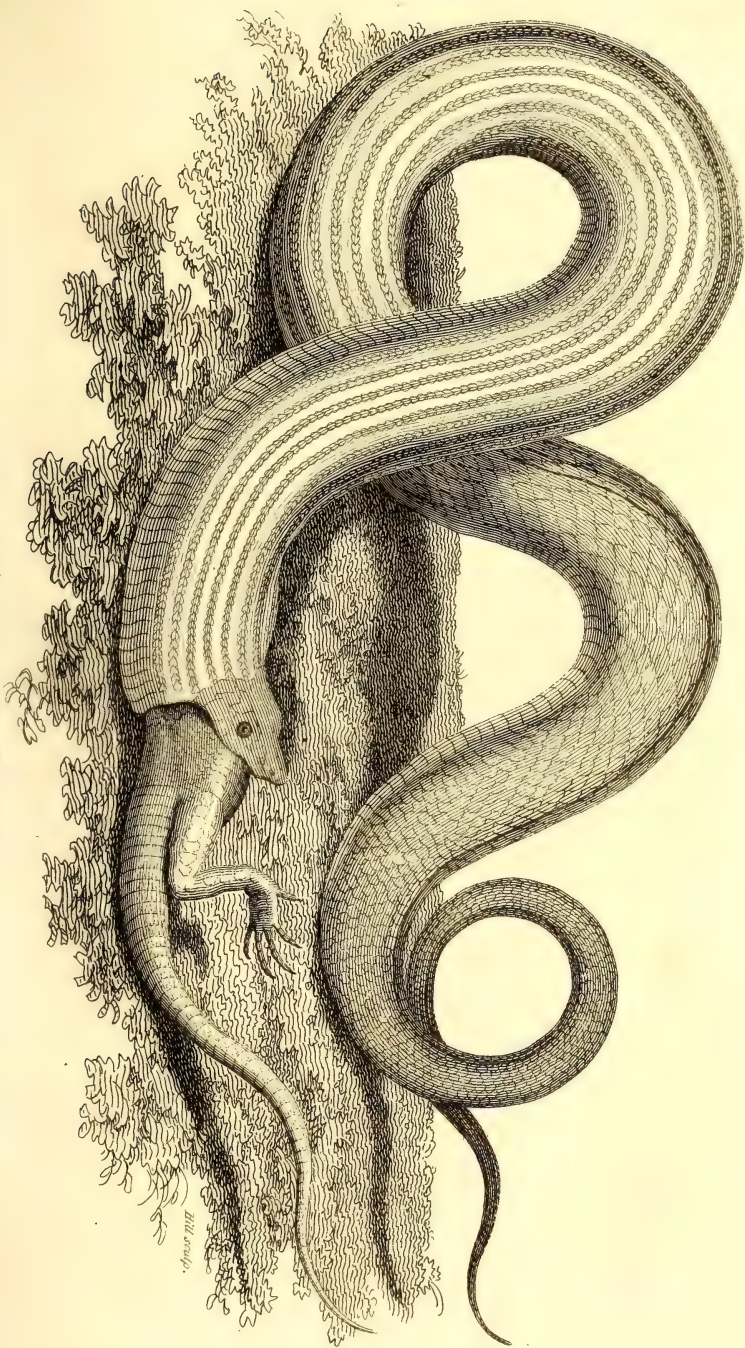
Serpens Corallina Amboinensis. *Seb. 2. t. 17. f. 1.*

Abdominal scuta 193, subcaudal scales 82.

LENGTH near three feet: head small, and covered with large scales: those on the body small, somewhat heart-shaped, and disposed in longitudinal rays or stripes, representing, in some degree, the articulations of Coralline: colour above blueish grey, sometimes greenish, with three dusky or rufous longitudinal streaks down the back: tail rather long, and tapering to a slender tip: abdomen pale. This, according to Linnæus, is a poisonous species: it preys on lizards, &c. In Seba is a representation of the identical specimen afterwards described by Linnæus*, taken in the act of swallowing a lizard, of at least equal diameter with its own body, in consequence of which the jaws are distended in such a manner as to alter entirely the natural appearance of the head, by stretching the lower into a perpendicular direction. It is a native of the eastern regions.

* Mus. Ad. Frid. p. 33.

CORALLINE SNAKE.



CANADA SNAKE.

Coluber Leberis. *C. pallidus, supra fasciis linearibus nigris capite albido.*

Pale Snake, with white head, and body marked above by linear black bands.

Coluber Leberis. *Lin. Syst. Nat. p. 275.*

Abdominal scuta 110, subcaudal scales 50.

SLIGHTLY described by Kalm, who informs us that it is a native of Canada, and that the upper parts are traversed by linear black bands: the head is white, with two rufous spots on the top, and a triangular spot over the nose: it is marked in the *Systema Naturæ* as a poisonous species, but Dr. Gray, in his paper on the *Amphibia* published in the *Philosophical Transactions*, considers this particular as doubtful.

 SUPERB SNAKE.

Coluber Elegantissimus. *C. albus capite nigro variato, corpore supra maculis rubris ocellatis serie quintuplici per dorsum dispositis.*

White Snake, with head variegated with black, and body marked above by a quintuple series of ocellated red spots.

Serpens lemniscata venustissima Americana. *Seb. 1. t. 81. f. 5.*

THIS, from the description and figure of Seba, appears to be a beautiful species, measuring about two feet in length; of a white colour, marked down the upper part with a quintuple series of black spots, with red centres, the middle row

being composed of very small spots, the next on each side of larger ocellated ones, and the lowest on each side, next the scuta, resembling that on the middle of the back, and consisting of small specks: the head is marked by a cross-shaped spot on the top, and by a few blackish ones across the snout: the tail appears short in proportion to the animal, measuring about two inches and a half, and tapering to a point. In the Gmelinian edition of the *Systema Naturæ* this snake is marked, I know not on what authority, as a poisonous species. It is said by Seba to be a native of America.

AULIC SNAKE.

Coluber Aulicus. *C. griseo-fuscus, fasciis transversis albis super latera bifurcis.*

Grey-brown Snake, with transverse white bands bifurcating over the sides.

Coluber Aulicus. *Lin. Syst. Nat. p. 381.*

Abdominal scuta 184, subcaudal scales 60.

A SMALL species, the specimen described by Linnaeus measuring only half a foot in length, and about a third of an inch in diameter: colour grey-brown, with more than twenty linear, white transverse bands, each bifurcated towards the abdomen: head white behind: tail about the fourth of the whole length: native of America, and considered as a poisonous species.

ZEBOA.

Vipera Orientalis, Hebræis *Zeboa*, Græcis *Hijæna* dicta. *Seb.* 2. *t.* 78. *f.* 1.

OF the size and general appearance of the common Viper, but differing in colour, being of a pale yellow, with the marks on the head, dorsal band, and lateral spots, of a reddish chesnut colour: perhaps no other than a variety of the Viper; yet the head is represented as covered in front with large scales: native of the Indian islands.

 BOIQUATRARA.

Serpens Indica Boiquatrara dicta. *Seb.* 2. *t.* 78. *f.* 4.

EXTREMELY resembling the preceding, but of larger size: colour cinereous yellow, with chesnut coloured dorsal stripe, consisting of large well-defined rhomboid spots touching each other: lateral spots, ovate, distinct, and reddish brown: head marked by a divaricated linear stripe on the top, the ends pointing backwards: perhaps, like the former, a variety of the common Viper.

MALPALON.

Serpens Ceilanica Malpalon dicta à Rajo in Synops. p. 331.
Seb. 2. t. 39. f. 4.

A BEAUTIFUL snake, about the size of the common Viper, and of a bright yellow colour, with a black dorsal stripe consisting of rather small, numerous, alternate, squarish spots (but with round, projecting ends), united to a middle black line: lateral spots of similar form, but of a red colour: sides of the body, near the scuta, speckled with black: head rather large, of a somewhat lengthened form, covered in front with large scales, and variegated with black spots: abdomen yellow, spotted with black: tail rather long, and gradually tapering to a fine point.

 STRIATED SNAKE.

Serpens Brasiliensis versicolor, species Æsculapii. Seb. 2.
t. 42. f. 1.

LENGTH about two feet: colour above pale blue, elegantly undulated by numerous blackish transverse streaks: head of moderate size, large-scaled, spotted with black, and marked at the beginning of the neck with a pair of short streaks: abdomen white: tail moderately taper.

SERENUS.

Serpens Cenchrus, vel *Serenus* Brasiliensis. *Seb.* 2. t. 42. f. 2.

ABOUT the size of the preceding: colour above blue, with a moderately broad dorsal sea-green stripe, marked with a few small, distant, black spots: the sides marked with deep blue or blackish spots: head of moderate size, large-scaled, and marked at the top by a large and somewhat triangular white spot pointing backwards: abdomen white, the scuta pretty deeply edged or variegated with dark brown: tail gradually tapering to a fine point: native of Brasil.

LOZENGE-SPOTTED SNAKE.

Coluber Rhombeatus. *C. glaucus, maculis rhombeatis nigricantibus medio cæruleis.*

Glaucous Snake, with blackish lozenge-shaped spots blue in the middle.

Coluber Rhombeatus. *Lin. Syst. Nat. p. 380. Mus. Ad. Frid. p. 27. t. 24. f. 2.*

Vipera Cencoatl dicta. *Seb. 2. t. 26. f. 1, 2, 3?*

Serpens Amboinensis tigrina. *Seb. 2. t. 15. f. 2.*

Abdominal scuta 157, subcaudal scales 70.

GENERAL length from two to three feet or more: colour grey or brownish, with three alternating, longitudinal rows of ovate, but somewhat rhomboid, dusky spots with large blueish centres: head rather large than small: abdomen pale or whitish, often clouded with blueish grey: the

rhomboid spots are most regular in the smaller specimens, in the larger becoming somewhat more broken in the outline and more approaching to an ovate form: native of India and South America: in the number of its abdominal and subcaudal scales it occasionally varies considerably.

OCELLATED SNAKE.

Coluber Ocellatus. C. castaneus, maculis ocellatis fuscis abdomine flavo.

Chesnut-coloured Snake, with ocellated brown spots, and yellow abdomen.

Serpens Guineensis rarissima Argus dicta. Seb, 2. t. 23. f. 1.

SIZE and general proportions of the Viper: colour pale chesnut, beautifully marked with five alternating rows of round ocellated spots, those of the middle range being the largest and of a blackish brown, the lateral ones of a paler or more rufous brown: abdomen yellow, with small scattered rufous spots: head covered with small scales: tail tapering to a moderately slender tip: native, according to Seba, of Guinea, and a rare species.

ARGUS SNAKE.

Coluber Argus. *C. fusco-castaneus, subtus flavescens, supra maculis ocellaribus rubris transversim fasciatus.*

Chesnut brown Snake, yellow beneath, and banded above by transverse rows of ocellated red spots.

Serpens Arabica Brasiliensibus Ibiboboca & Boiguacu dicta; alias Argus. Seb. 2. t. 103.

LINNÆUS, relaxing from the strictness of his general rule, has admitted this snake into the *Systema Naturæ*, though he knew not the number of its scuta and squamæ, which he seems to have considered as the most important of all points in the history of Serpents: it indeed forms a very useful addition to the general character, and should never be neglected where it can be ascertained; but can hardly be considered as the only, or even the chief, mark of distinction*. The Argus Snake is a large and elegant species, measuring, according to Seba, its first describer, above five feet in length, and being of a moderate thickness in proportion: the head is large, flattish, covered in front with small scales, and so very protuberant on each side at the hind part as to appear heart-shaped, or rather bilobate: the teeth large and strong: the whole upper surface of the animal is of a dusky chesnut colour, the scales being small, ovate, and each marked by a white speck; while

* Scuta in serpentibus plurimum variant, ut nunquam scutis ipsis fidendum.—*Laurenti.*

the body is beautifully marked from head to tail by numerous transverse rows of round ocellated red spots, surrounded by a white iris and by an exterior red one: the number of these ocellated spots in each row is about seven or eight: the under part of the animal or abdomen is of a pale yellow colour: the scuta broad in proportion to the body; the tail moderately slender, tapering to a point, and seemingly measuring about a fifth of the whole length. This Snake is, according to Seba, a native of Arabia. The appearance of the head seems strongly to indicate a poisonous species.

CHIAMETLA SNAKE.

Coluber Chiametla. *C. cæruleus, subtus flavus, singulis squamis macula alba notatis.*

Blue Snake, yellow beneath, with every scale marked by a white spot.

Serpens Americana *Chiametla* dicta. *Seb. 2. t. 61. f. 1.*

Vipera cærulea Americana ex insula Sancti Eustachii. *Seb. 2. t. 36. f. 4.*

THIS, which is described and figured by Seba, is a highly beautiful species, measuring about four feet and a half in length, and having nearly the same general proportions with the common English snake, except that the head is larger. The colour of the whole animal above is a beautiful vivid blue, each scale being marked in the middle by a white spot: along the sides is a row of moderately distant black spots with white centres: the head is covered with large scales, and is

unspotted, as is also the thinnest part of the tail, where the blue is more intense than on the other parts: the under part of the animal is of a yellowish white, and in a smaller specimen figured in the same work the abdomen is of an orange-colour. This species is a native of South America and the West-Indian islands: uncertain whether poisonous or not.

JAVA SNAKE.

Coluber Javanicus. C. griseus, capite cæruleo striato, corpore striis cæruleis margine luteis decussato.

Grey Snake, with the head striped with blue, and the body crossed by blue stripes with gold-coloured edges.

Abdominal scuta 312, subcaudal scales 93.

THIS remarkable snake is described by Mr. Wurmb, in the Memoirs of the Batavian Society for the year 1787. It grows to the length of nine feet, and is principally seen in the rice-fields of Java; but it is added, that those which are found in the higher and more wooded situations arrive at a far superior size, so as to become dangerous from their strength alone, devouring not only rats, birds, &c. but even some of the larger animals, which cannot always escape their pursuit. The head of this snake is large and flat, and covered, as in the major part of this genus, with large scaly plates: the mouth is furnished with double rows of sharp teeth, but is destitute of fangs, the animal not being of a poisonous nature: the iris of

the eye is yellow: the upper part of the head grey mixed with blue: from behind the eyes pass two deep-blue stripes to the upper part of the neck, where they unite into an arch about an inch beyond the head: a third stripe of the same colour proceeds from the snout to the occiput, where it divides into two, and surrounds a yellow spot marked with a few blue specks: the upper part of the body is divided, as it were, into squares resembling a kind of lattice-work, formed by stripes of bright blue with gold-coloured edges: the middle parts of the squares being of a grey colour, with changeable reflections of yellow, blue, and green: towards the sides the grey colour is of a lighter or paler cast, as well as on the tail, where the squares are smaller than on the back: each side of the body is also marked by a row of white spots, situated at the crossings of the blue stripes. This superb species is called in Java by the title of *Oular-Sawa*, or Rice-Field Snake.

DABOYA SNAKE.

Le Daboie. *Cepede Serp.* p. 255. *pl.* 13. *f.* 2.

THIS Snake is slightly described by the Count de Cepede, who considers it as the species which, in the kingdom of Juda, or Widah, and some other parts of Africa, is regarded as a deity, and kept in temples consecrated to its worship. This superstition is said by the traveller De Marchais to

have originated from the following circumstance, viz. the army of Juda being on the point of yielding to that of Ardra, it happened that a large serpent of this species made its appearance, which the chief priest (probably knowing it to be innoxious) lifted up in his arms, and displaying it as a kind of miracle, or at least as a propitious omen, persuaded the army again to rally, by which means a signal victory was obtained, and the animal was in consequence exalted into a divinity. It is said to arrive at a very considerable size, and is of a whitish colour, ornamented on the upper part throughout the whole length, by a triple range of large oval rufous patches bordered with black: the head is rather large, and covered with oval carinated scales similar to those on the rest of the animal: the mouth is destitute of fangs: the specimen in the royal cabinet, described by the Count de Cepede, measured three feet five inches in total length, the tail measuring five inches and nine lines.

BRASILIAN SNAKE.

La Brasilienne. *Cepede Serp. p. 119. pl. 4. f. 1.*

DESCRIBED by Cepede, and considered as a species before unnoticed: length about three feet, but probably grows to a much larger size: head, as well as body, covered with oval carinated scales: snout terminated by a large and almost perpendicular scale rounded at top, but emarginated at

the bottom for the passage of the tongue: upper parts of the animal marked by large, oval, rufous patches bordered with black; and in the intervals between the large patches are several much smaller ones of a dusky colour: fangs very large: native of Brasil. From the jaws of a poisonous serpent from the same country, preserved in the royal cabinet, and agreeing in all particulars, except in size, with those of the above species, the Count de Cepede infers that the animal, at its full size, may be supposed to arrive at the length of six feet.

If we compare the description of this species with that of the *Daboya*, we shall find an extreme resemblance between the two animals, the *Daboya* only appearing to differ from the present species in not being furnished with fangs.

TRIANGULAR-HEADED SNAKE.

La Tête-Triangulaire. *Cepede Serp. p. 132. pl. 5. f. 2.*

ALLIED in general appearance to the common Viper: colour greenish, with spots of different shapes on the head and body, uniting so as to form an irregular band down the back: abdomen dusky, with white edges: head of a more triangular shape than usual, owing to the projecting ends of the jaws, covered with small scales, which, as well as those on the body, are smooth, or not carinated: total length two feet, of which the tail

measures three inches and nine lines: native of the island of Eustatia: described by the Count de Cépède.

PANTHER SNAKE.

La Tigrée. *Cépède Serp. p. 136.*

ALLIED to the Viper: length about a foot and half: tail two inches: head like that of the common Viper: all the scales carinated: colour of the upper parts whitish rufous, with dusky spots bordered with black, like those on the skin of a panther or leopard: colour of the under parts not specified. Described by Cépède. Native country unknown. This seems allied to the *Ocellated Snake*.

LEOPARD SNAKE.

Serpens tigrina ex insula Bali, &c. Seb. 2. t. 46. f. 3

LENGTH about two feet: colour a beautiful yellow, spotted with numerous, moderately small, ovate, or roundish black or deep brown spots: abdomen variegated with transverse brown streaks: head rather small, large-scaled, rather sharp-snouted, of a brown colour above: tail rather slender, and tapering to a fine point: native of the Indian islands.

SPOTTED SNAKE.

Coluber Maculatus. C. caeruleus, nigro maculatus, subus albidus, scutis margine maculis dimidiatis nigris.

Blueish Snake, spotted with black, whitish beneath, with the scuta marked on the edge with dimidiated black spots.

GENERAL habit of *C. Natrix*, but not so long in proportion: colour glaucous or pale blueish, marked on the upper parts with numerous, roundish, black spots: sides of the scuta with dimidiated spots of the same colour. It seems much allied to the figure in Seba above referred to, but differs in colour; Seba's specimen being yellow instead of blue: described from a specimen in the British Museum.

RINGED SNAKE.

Coluber Natrix. C. olivaceo-fuscus (interdum caeruleus) macula collari utrinque nigra, alteraque flava, lateribus nigro maculatis, abdomine fusco.

Olive-brown (or blueish) Snake, with a black patch accompanied by a yellow one on each side the neck, a row of narrow black spots down each side, and dusky abdomen.

Coluber Natrix. Lin. Syst. Nat. p. 380.

Natrix torquata. Raj. Quadr. 334.

The Common Snake. Ringed Snake. *Brit. Zool. 3. p. 31.*

Abdominal scuta 170, subcaudal scales 60.

THIS species appears to be pretty generally diffused through all parts of Europe, and is common in our own island, frequenting woods, moist

hedges, and shady places: in colour it occasionally varies, but is generally either of a blueish grey or pale olive on the upper parts, marked along the sides by a row of small transverse black streaks, alternating with some smaller spots of the same colour; and on each side the neck is a black and somewhat semilunar patch, the horns or tips pointing forward: this is bounded in front by a second patch of a pale yellow or whitish colour, thus forming a kind of collar on each side the neck: the under parts are of a mixed black and whitish colour, the black being disposed in large squarish alternate patches or divisions, which towards the tail become more confluent, so as nearly to exclude the other variegations: the head is rather small than large, and is covered with large scaly plates: the sides of the mouth are marked by several black bars: the remainder of the upper parts are covered with ovate and slightly carinated scales: the tail is of moderate length, and gradually tapers to the extremity. This animal is of an innoxious nature, and may be tamed to a considerable degree. Mr. White, in his *History of Selburne*, has the following remark on this subject: "I knew a gentleman who kept a tame snake, which was in its person as sweet as any animal; but as soon as a stranger, or a dog or cat came in, fell to hissing, and filled the room with such nauseous effluvia as rendered it hardly supportable." The snake chiefly lives by preying on frogs, mice, small birds, insects, worms, &c. It is known to frequent the water occasionally, for the sake of

frogs, &c. and is capable of swimming, though not with any great degree of celerity. It deposits its eggs in any warm and moist situation, as under hedges, in dunghills, &c. in the form of a continued chain or necklace of ova, to the number of twelve, fourteen, sixteen, or even twenty, of the size of those of a blackbird, and of a whitish colour: these, according to the observations of Mr. White, “do not hatch till the spring following,”

During the winter the snake conceals itself in any convenient retreat, and becomes nearly torpid, reappearing in the spring, when it casts its skin, which cracking or opening on the edges of the lips, is, by the efforts of the animal, gradually thrown off, in an inverted direction, throughout its whole length, to the very terminal scale of the tail, and so complete is the spoil or exuvium, as to exhibit the very coat or membrane of the eyes* themselves: the whole skin is entirely transparent.

* Not the cornea itself, but its exterior pellicle.

FRENCH SNAKE.

Coluber Atrovirens. C. atrovirens, flavo maculatus, abdomine flavo lateribus nigro punctato.

Black-green Snake, speckled with yellow; the abdomen yellow, with a row of black specks down each side.

Anguis Æsculapii niger. Aldrov. Serp. p. 271. Jonst. Rept. t. V.

La Coleuvre verte & jaune. Cope de Serp. p. 137. pl. 6. f. 1.

Abdominal scuta 206, subcaudal scales 107.

THIS seems to be the species figured in Aldrovandus under the name of *Anguis Æsculapii niger*, and which appears to have been so little attended to by modern naturalists as to have been generally confounded with the preceding, till it was again brought to notice by Mons. Daubenton, and afterwards by the Count de Cope, who has accurately described it, and who informs us that it is very frequent in some of the Provinces of France, being found in woods and moist shady places: in its general size and appearance it resembles the Ringed Snake or *Natrix*, but differs in colour, being of an extremely dark or blackish green, so as to appear black on a cursory view, the sides being marked by numerous rays of yellow specks, of different forms, some oblong, and some square, and which form somewhat more decided or distinctly marked stripes towards the tail than towards the head: the eyes and edges of the mouth are bordered with yellow scales: the abdomen is also yellow, each scutum being marked on each side by a black speck. This snake is an animal of a perfectly harmless nature, and, like

the former, is capable of being tamed to a considerable degree. The Count de Cepede relates, from Mr. Bomare, an anecdote relative to a snake which he supposes to have been of this species, which had been so completely tamed by a lady, as to come to her whenever she called it, follow her in her walks, wreath itself round her arms, and sleep in her bosom. One day, when this lady went in a boat, to some distance up a large river, she threw the snake into the water; imagining that it would readily recover the boat by swimming; but the current proving unusually strong, at that juncture, owing to the advance of the tide, the poor animal, in spite of all its efforts to reach the vessel, was unfortunately drowned. On the approach of winter this species, like the former, retires into subterraneous retreats, and passes that season in a state of torpidity, from which it recovers in the spring, when it casts its skin, and appears in its highest beauty.

DUN SNAKE.

Coluber Elaphis. *C. gilvus, supra lineis quatuor longitudinalibus nigris, abdomine albido.*

Gilvous Snake, with four longitudinal black lines, and whitish abdomen.

Elaphis. *Aldrov. Serp. p. 266, 267. Jonst. Rept. t. V.*

La Quatre-Raies. *Cepede Serp. p. 163. pl. 7. f. 1.*

Abdominal scuta 218, subcaudal scales 73.

THOUGH this species has been pretty well figured in the work of Aldrovandus, and from

thence copied into that of Johnston, yet it appears to have been in a great degree unknown to modern naturalists till it was more distinctly described by the Count de Cepede, who informs us that it is found in some parts* of France, and measures near four feet in length: its colour is a very pale reddish brown, or dun, marked on each side the back, throughout the whole length, by two dusky or blackish longitudinal stripes, commencing on each side the head, which is covered with large scaly plates: the scales on the back are carinated, those on the sides smooth: the abdomen is pale or whitish: the tail measures about nine inches in length, and gradually tapers to the extremity: the general form of the animal resembles that of the common snake, but it is somewhat thicker in proportion to its length: it is a perfectly harmless species; occurs in Italy as well as in France, and may probably be found in most of the warmer parts of Europe.

* According to Latreille, not uncommon in ci-devant Provence.

ÆSCULAPIAN SNAKE.

Coluber Æsculapii. C. rufus, linea utrinque laterali fusca, abdomine albido fusco variato.

Rufous Snake, with a dusky lateral stripe on each side, and whitish abdomen variegated with brown.

Anguis Æsculapii vulgaris. Aldrov. Serp. p. 270. Jonst. Serp. t. V.

Le Serpent d'Esculape. *Cepede Serp. p. 165. pl. 7. f. 2.*

Abdominal scuta 175, subcaudal scales 64 pair.

THIS, says Cepede, is common in most of the warm parts of Europe, and is no where more frequent than in the neighbourhood of Rome, and is probably the species peculiarly consecrated by the ancient Romans to the benevolent deity whose name it bears. Whether we admit this supposition or not, we must at all events acknowledge that Linnæus, with peculiar impropriety, applied the title of *Coluber Æsculapii* to an American species. The Snake intended by Cepede is nearly four feet in length, and of a rufous colour on the upper parts, more or less deep in different individuals, the back being marked on each side by a dusky or blackish longitudinal band: the scales on the sides, nearest the scuta, are white bordered beneath with black, thus forming a range of small whitish triangles along each side the body: the head is rather large, and covered in front, as in the common snake, by scaly plates: the scales on the back are oval and carinated; those on the sides smooth: the tail measures about nine inches in length: in its general habit it is much allied to



Heath sculp.

MOURNING SNAKE.

the Coluber Natrix or Ringed Snake, as well as to the Coluber Atrovirens. In its manners it is perfectly innocent. It has been long ago described and figured in the work of Aldrovandus under the same title by which it is distinguished by the Count de Ceppe.

MOURNING SNAKE.

Coluber Pullatus. *C. supra niger albo variatus, infra albus nigro variatus.*

Snake with the body black above, with white variegations, and white beneath with black variegations.

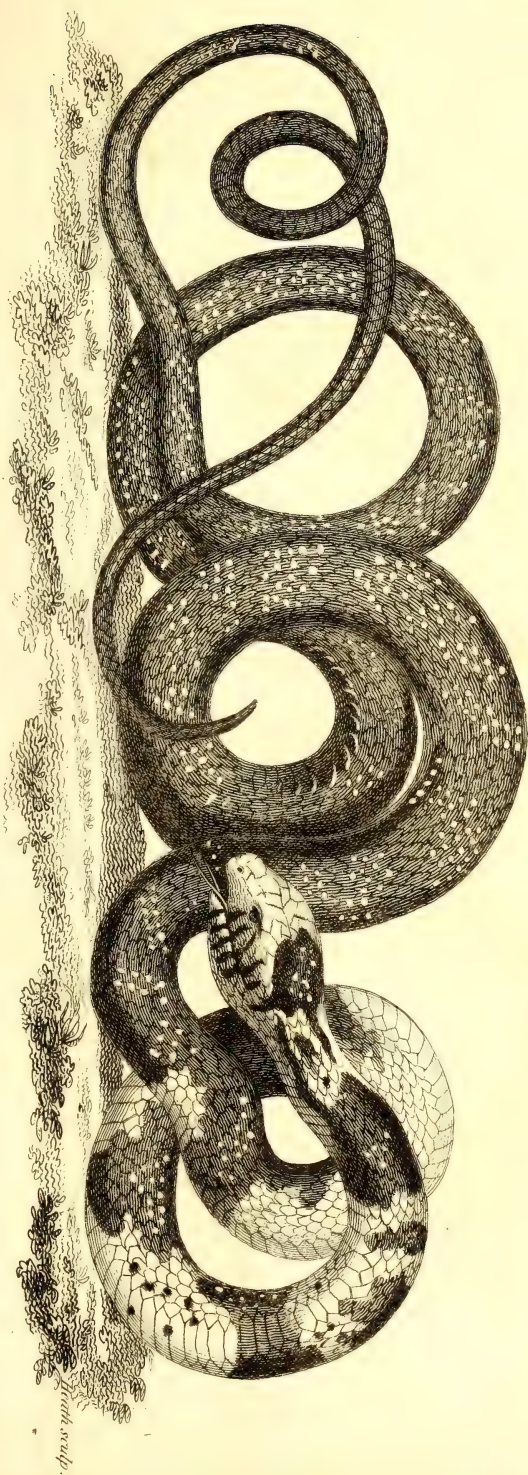
Coluber Pullatus. *Lin. Syst. Nat. p. 382.*

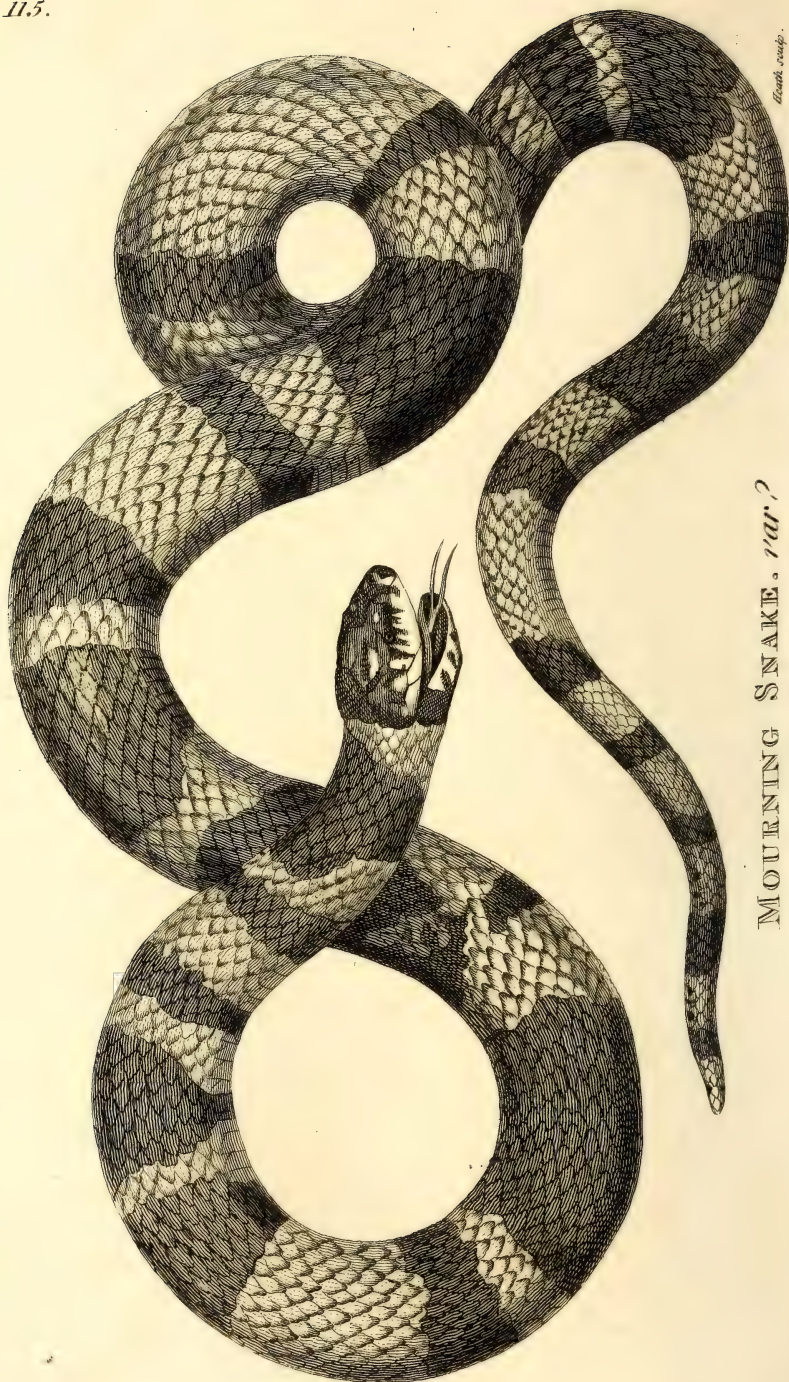
Abdominal scuta 217, subcaudal scales 208.

A LARGE species, often measuring six feet in length: habit rather slender than thick; the general proportions resembling those of the Coluber Natrix, except that the tail is somewhat less slender: head covered in front with large scaly plates; the remainder of the animal on the upper parts with large and slightly carinated scales: general colour black, with white variegations, often differently disposed in different specimens: abdomen commonly white, marked here and there with narrow black bars: sometimes the colours are so disposed that either the black or white might with equal propriety be termed the ground-colour: the head is generally white, and the lips barred with black. Several varieties of the Coluber pullatus appear to be figured in the work of Seba; though it can

hardly be admitted that all the figures quoted by Mr. Merrem, in his *Beytrage zur Naturgeschichte*, can properly be referred to this species. Among the most remarkable are the following, viz.

1. *Serpens ex Lybia*. Seb. 2. t. 15. This is entirely white, with a very few small jet-black oblong spots, very distantly scattered over the upper parts, and some narrow black streaks on the fore part of the abdomen.
2. *Serpens Americana elegantissima, maculis nigris notata*. Seb. 2. t. 22. It is milk-white, the scales, for about a third part of the whole length, being edged with black; thus constituting elegant black reticulations on that part of the animal: a very few small square black spots are also distantly scattered over the remainder of the body, and on the abdomen are a few dusky markings.
3. *Serpens Medock*. Seb. 2. t. 49. Milk-white, with reticular transverse black bars on the anterior part of the body, while the hind part is almost entirely of a dusky brown colour: the lips as in almost all the varieties, barred with black and white.
4. *Tojuqua*. Seb. 2. t. 105. A large snake; the fore parts variegated with black and white; the hind part black, with transverse bands of numerous small white spots.
5. *Serpens Æsculapius Orientalis maximus*. Seb. 2. t. 86. Of a cinereous yellow, with broad deep-brown zones or surrounding bands;

MOURNING SNAKE, *var.**Yungia Seba.**Head up.*



MOURNING SNAKE. var.?
Serp. Escul. orient. max. Seba.

Death snake.

the scales on the yellow parts being also tipped here and there with brown: this is said by Seba to be a native of Ceylon.

A more extraordinary variety, if Mr. Merrem's conjecture be right, is the *Coluber Petzcoatl*, Seb. 2. t. 84. It is of a fine yellow, with a pretty strong tinge of orange on the back, and several transverse bands of similar colour on different parts of the body: it is of large size, and is described as being very glossy or smooth, and as a native of Mexico, inhabiting hollow trees, &c. the back appears pretty strongly carinated.

If we were inclined to follow Mr. Merrem's example in thus extending supposed varieties, we might proceed a step farther, and refer the *Ana Candaja*, Seb. 2. t. 83. to the same species: its general proportions, and form of scales, are similar, but its colour is pale blue, with the abdomen white: it is a native of Ceylon, and is said to grow to a very large size, and to be able to kill cattle by strangling them.

VAR. ?

THE *Coluber Haje* of Linnæus appears, from the short description given in the *Systema Naturæ*, to be so extremely nearly allied to the *pullatus* both in size and colour, as well as in the number of its scuta and squamæ, that it is impossible not to suppose it the same animal: yet the *Haje* is said by Forskal to be a poisonous species, which the *pullatus* is not.

LARGE-SCALED SNAKE.

Coluber Macrolepidotus. *C. plumbeus, squamis dorsalibus maximis elongatis, abdomine albido fusco transversim fasciato.*

Lead-coloured Snake, with extremely large elongated dorsal scales, and whitish abdomen, with broad transverse bands.

DESCRIBED from a specimen in the Museum of Dr. William Hunter: general habit that of the *pul-latus*: size of a large *Natrix*: head covered with large scales: remainder of the upper parts with extremely large long scales, exceeding in proportional size those of any other known serpent; those near the ridge of the back, in particular, measure three quarters of an inch in length; their disposition is obliquely backwards: colour on the upper parts blueish, the black skin of the body appearing, as it were, to edge the scales with that colour: under parts blueish white, with extremely broad, brown, transverse bands at intervals, so that the abdomen may be described either as brown with white bands, or *vice versa*: tail of moderate length, taper, round, and covered with hexagonal scales: native place unknown.

CARINATED SNAKE.

Coluber Carinatus. *C. plumbeus, squamis magnis ovatis porosis, abdomine albido, dorso carinato.*

Lead-coloured Snake, with large ovate porous scales, whitish abdomen, and carinated back.

Coluber carinatus. *Lin. Syst. Nat. p. 384.*

Abdominal scuta 157, subcaudal scales 115.

A LARGE species, growing to five or six feet in length, and of a moderate thickness: head rather small, with large scales in front: tail tapering gradually to a point: back much carinated, rising into a ridge on the top: colour deep blueish brown or cinereous, paler or whitish underneath: scales very large, and marked with numerous impressed points, as if pierced with pin-holes: under parts whitish: native of North America: a harmless species: varies as to colour, which is sometimes blueish black, and sometimes cinereous with a rufous cast: scales often pale or whitish towards the tips.

MOLURUS SNAKE.

Coluber Molurus. *C. crassus pallidus, maculis magnis irregularibus rufis margine fuscis variatus, cauda brevi.*

Thick-bodied pale Snake, with large irregular rufous variegations edged with brown, and short tail.

Coluber Molurus. *Lin. Syst. Nat. p. 387.*

Abdominal scuta 248, subcaudal scales 59.

A LARGE snake, with the general habit of a Boa rather than a Coluber, being of very considerable thickness in proportion to its length: head rather large; snout lengthened, like that of the Boa canina, and covered with large scales: tail short, gradually tapering to a point: colour of the whole animal whitish or grey, clouded with large irregular rufous variegations bordered with brown: under parts white. Native of India: not poisonous: grows to the length of five or six feet.

COPPER-BELLIED SNAKE.

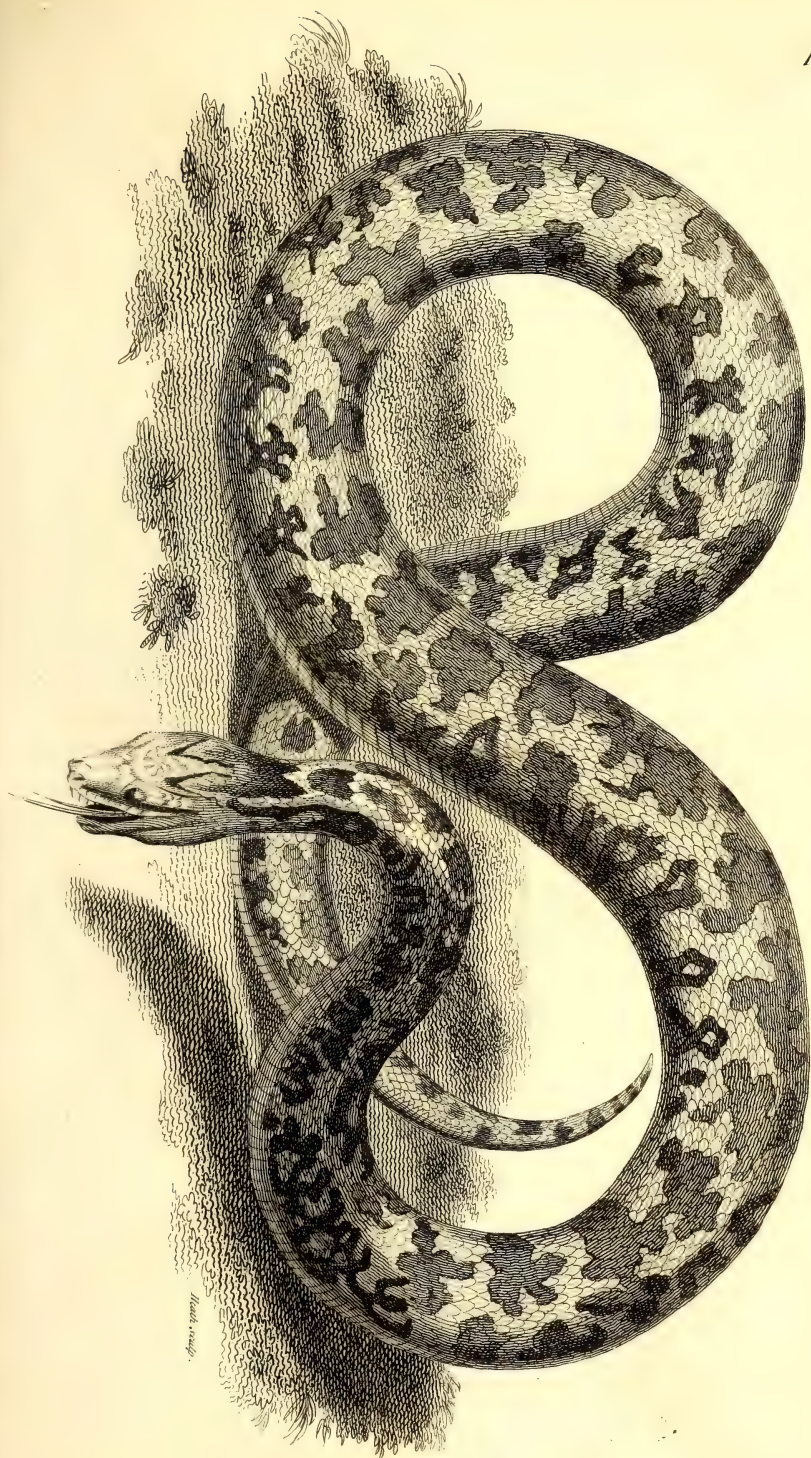
Coluber Erythrogaster. *C. fuscus, abdomine cupreo.*

Brown Snake, with copper-coloured abdomen.

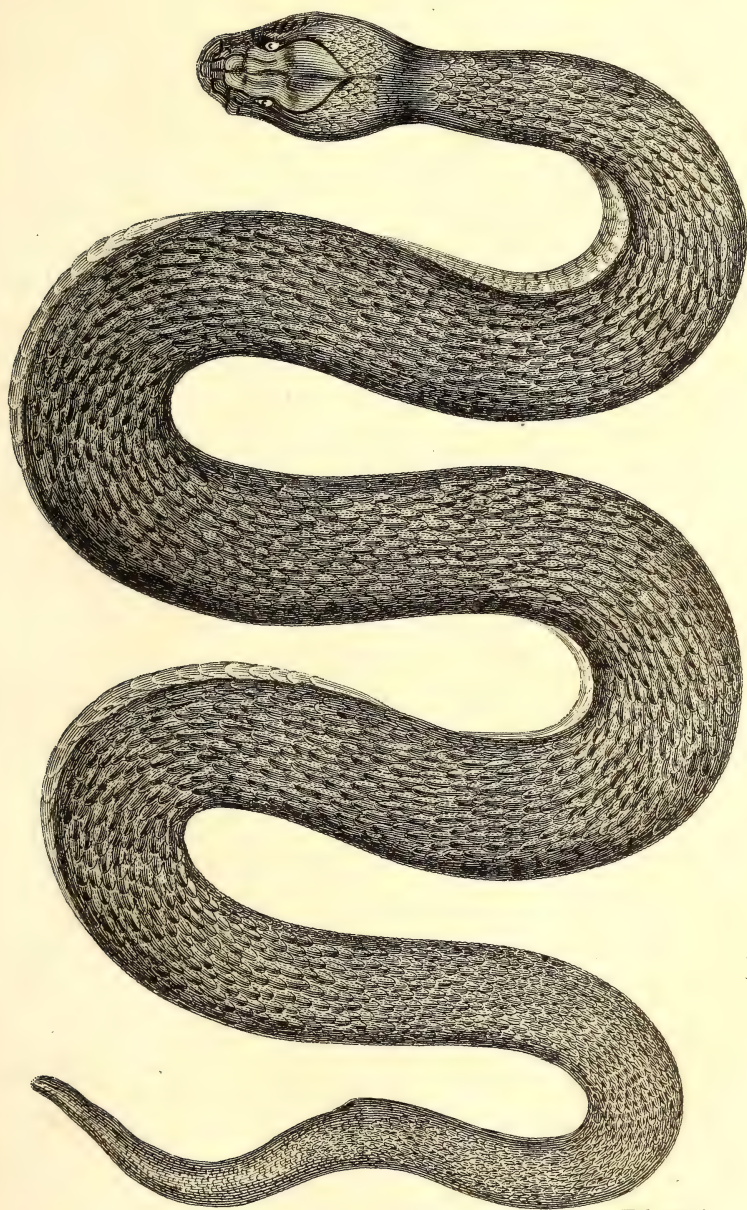
Coluber erythrogaster. *Forst. Catal. Catesb. Carol. 2. t. 46.*

THE Copper-bellied Snake is a native of North America, and is thus described by Catesby in his History of Carolina: "These snakes sometimes approach near to the size of the Rattle-Snake: they are of a brown colour, except their bellies, which are of a muddy red or copper colour: they frequent the water, and very probably prey on fish;

MOLTREUS SNAKE.



COPPER-BELLIED SNAKE.

*Hill sculp.*

but birds and such other animals as they are able to overcome they devour; frequently entering the houses of poultry, sucking the eggs, and devouring the fowls: they are bold, nimble, and active, but are generally reputed not venomous, and have no fangs like the viper kind. I never observed their colours to vary." Mr. Catesby's figure represents the head covered with large scales: and the tail remarkably thick, short, and obtuse.

CUPREOUS SNAKE.

Coluber Acontia. C. cupreus, squamis albo carinatis, abdomine flavo rubro maculato.

Copper-coloured Snake, with the scales carinated by a white line, and abdomen yellow with red spots.

Serpens Acontias, sive Jaculus Americanus, &c. *Seb. 2. t. 64. f. 1.*

IN its general appearance this snake, according to Seba's figure, bears a considerable resemblance to the Copper-belly of Catesby, but the head is larger, and covered with small scales, the neck thinner, and the tail somewhat more taper: the whole upper parts are of a light copper colour, each scale marked by a white streak or carina: the abdomen is yellow, spotted on the edges with small red specks. From the size of the head, and its being covered with small scales, it should seem that this is a poisonous species. It is a native of the island of Santa Cruz.

SURINAM SNAKE.

Coluber Surinamensis. *C. cinereus, subtus subflavescens, corpore fasciis ferrugineis subundulatis transverses cincto.*

Cinereous Snake, yellowish beneath, with the body surrounded by somewhat undulated transverse ferruginous bands.

Anguis Surinamensis sonum edens. *Seb. 2. t. 59. f. 2.*

AN elegant species: length about three feet and a half: habit moderately stout or thick: head rather large, and furnished with largish scales in front: colour of the whole animal cinereous, marked from the neck to the end of the tail with moderately broad, equidistant, and somewhat undulated rufous-yellow bands or zones entirely surrounding the body: tail of moderate length, gradually tapering to the extremity: said to be a native of Surinam: allied in habit to the *Coluber angulatus*.

 CORN SNAKE.

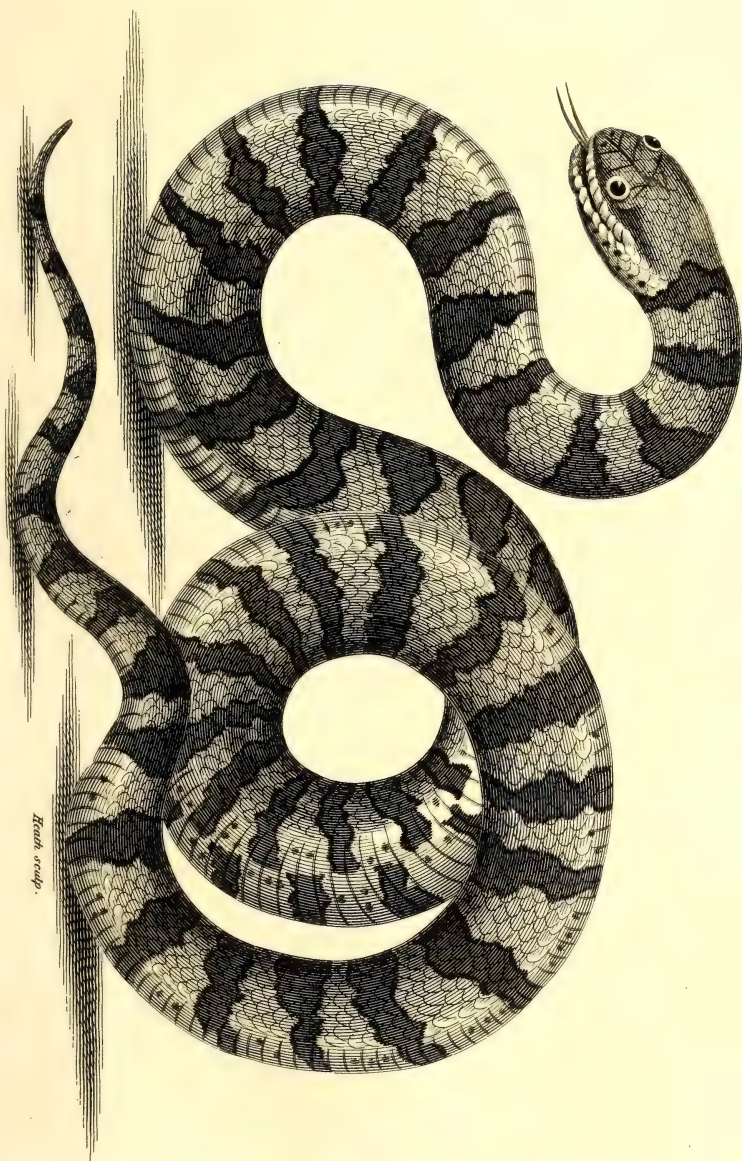
Coluber Carolinianus. *C. flavescens, maculis magnis ferrugineis albo nigroque marginatis, abdomine nigro variato.*

Yellowish Snake, with large ferruginous spots with black and white margins; and abdomen variegated with black.

Corn Snake. *Catesb. Carol. 2. pl. 55.*

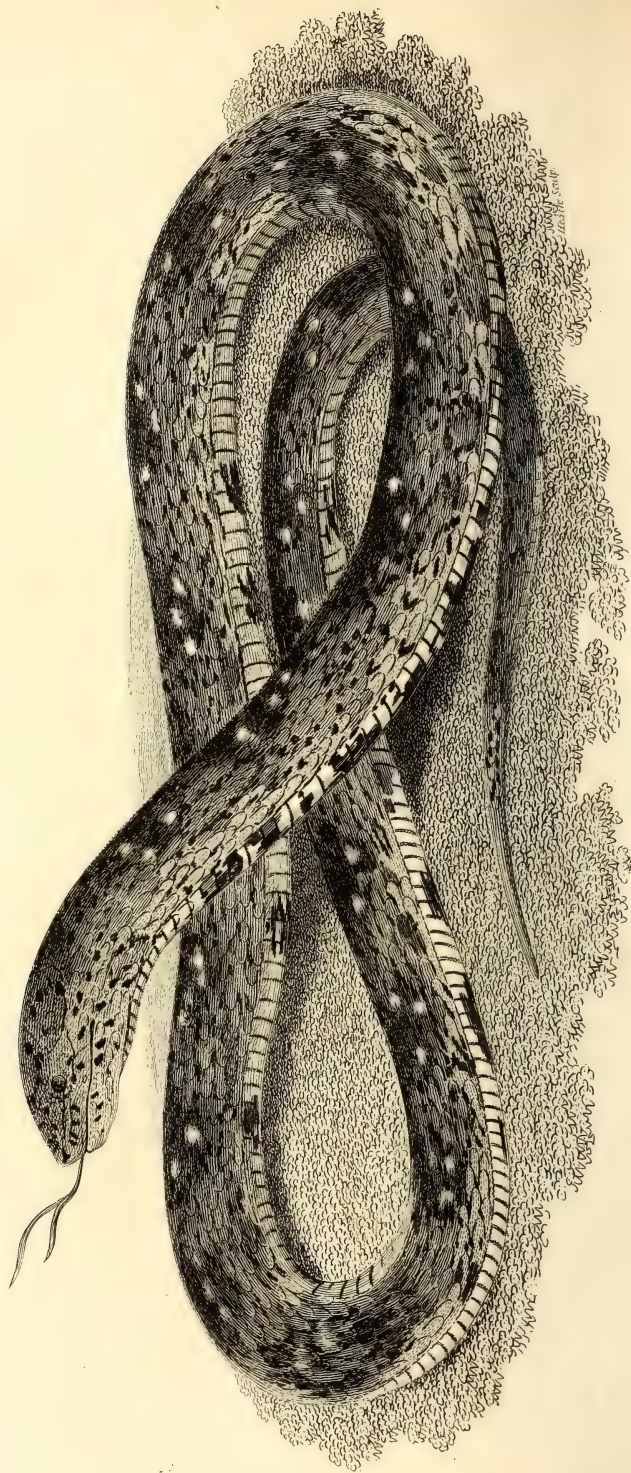
THIS is a highly beautiful animal, arriving sometimes at a very considerable size, and measuring five feet or more in length,, though commonly seen much smaller. Its habit or genera

S U R I N A M S N A K E .





CORN SNAKE.



form resembles that of the *Natrix*, or common English Snake, and its general colour is pale whitish yellow, ornamented on the upper parts with numerous large and somewhat irregular ovate patches of very bright ferruginous, bordered with black or deep brown, with a few small white spots intermixed: these spots or patches are largest on the back, and smallest on the sides, where they are accompanied by still smaller specks of black: the under parts are whitish, tinged with yellow, and varied here and there by irregularly angular blackish patches. Like most other snakes, it appears more or less brilliantly coloured at different periods, and is most beautiful after having cast its skin: the ground-colour is sometimes suffused with a tinge of purple, which adds a peculiar beauty to its appearance. It is of an innocent nature, and is principally found in woods. It is a native of North America, and in particular of Carolina. Mr. Catesby describes it under the name of the Corn Snake, which he tells us is given it from a fancied resemblance of its colour to those of some kinds of Indian corn or maize. It is, according to Catesby, “a great robber of hen-roosts.” His figure represents it as of a subferruginous yellow, with reddish brown dorsal spots and variegations. It is sometimes called by the name of the Beech Snake. The *Compressed Snake* of Mr. Merrem, 2. pl. 11. appears much allied to this in general appearance.

TEXTILE SNAKE.

Coluber Textilis. *C. griseo-flavescens, nigro irroratus, fasciis numerosis undulatis rubro-ferrugineis transversis.*

Yellowish-grey Snake, freckled with black, and marked by numerous, undulated, transverse, bright-ferruginous stripes.

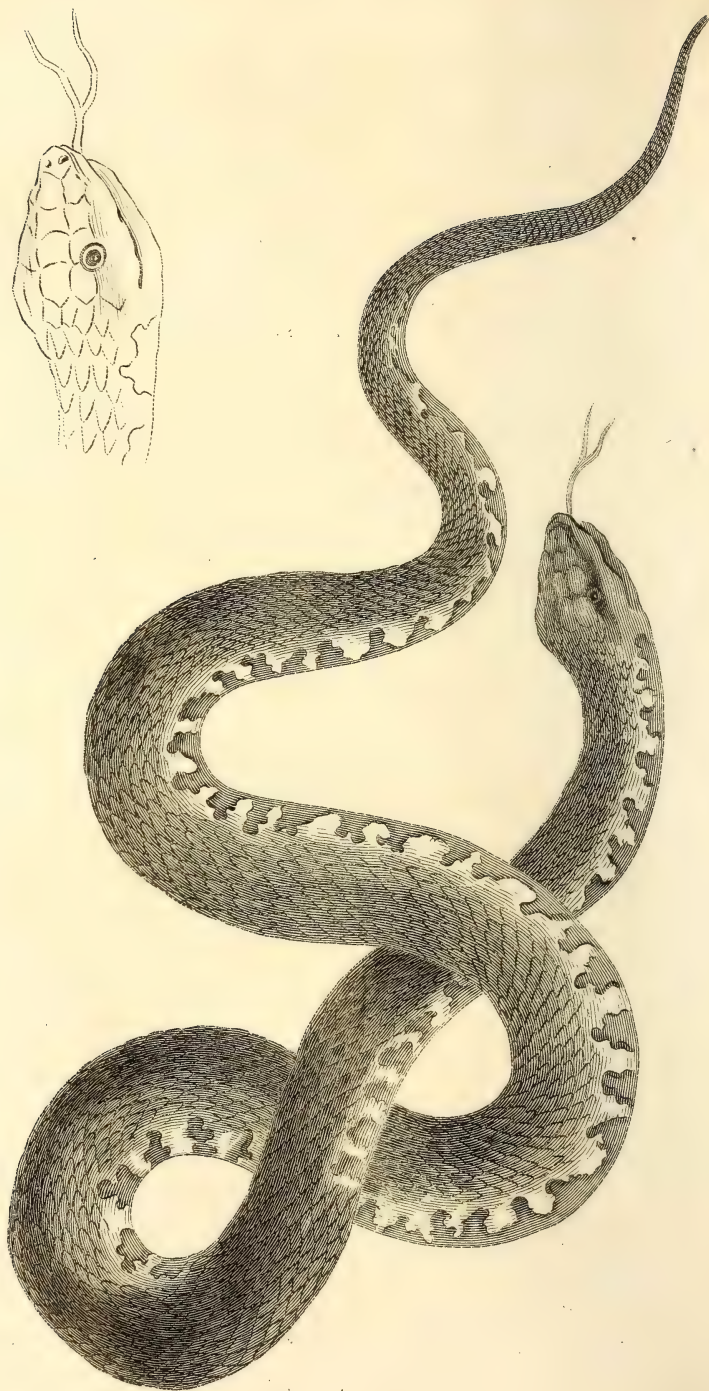
Serpens Brasiliensis textilis. *Seb. 2. t. 67. f. 3.*

Serpens Surinamensis elegans. *Seb. 2. t. 31. f. 1.*

Serpens Ammodytes Americana flammifera. *Seb. 2. t. 31. f. 2.*

A RATHER large and very elegant species, represented on some of Seba's plates, but not referrible to any Linnæan species: general habit that of the Natrix: ground colour yellowish grey, with numerous, pretty closely-placed, transverse, irregularly angular bands of bright ferruginous or dusky red, scattered over, as is also the ground-colour, with numerous black specks of different sizes: head rufous, covered with large scales: under parts throughout the whole length pale yellow: tail very slender and sharp-pointed: native of Brasil, Surinam, and other parts of South America.

WAMPTU SNAKE.



WAMPUM SNAKE.

Coluber Fasciatus. C. cæruleus, subtus pallidior cæruleo lucidiore variatus.

Blue Snake, paler and variegated with brighter blue beneath.

Wampum Snake. *Catesb. Carol. 2. pl. 58*

Coluber fasciatus? *Lin. Syst. Nat. p. 378.*

Fasciated Snake. *Nat. Misc. vol. 8. pl. 266.*

Abdominal scuta 128? subcaudal scales 67?

THIS, which is one of the handsomest of the North American snakes, is described and figured by Catesby, but as that author lived at a period when the rules of modern natural history were in a great degree unknown, he seems to have given a general rather than a minutely accurate representation of the animal; his figure not expressing the abdominal and subcaudal scuta and squamæ. The Wampum Snake, he informs us, is of a dark blue above, the belly being finely clouded with brighter blue: the head small in proportion to the body: he adds, that it is an innocent species, and sometimes grows to the length of five feet, retaining its colours and marks throughout all periods of its growth. It receives its common title of the Wampum Snake from its colours, which resemble those of the strings of Indian money called Wampum, composed of shells cut into regular pieces, and strung with a mixture of blue and white. It is a native of Carolina and Virginia.

BLACK SNAKE.

Coluber Constrictor. *C. totus niger, lucidus, longissimus.*

Shining-black Snake, with very long slender body.

Black Snake. *Catesb. Carol. 2. pl. 48.*

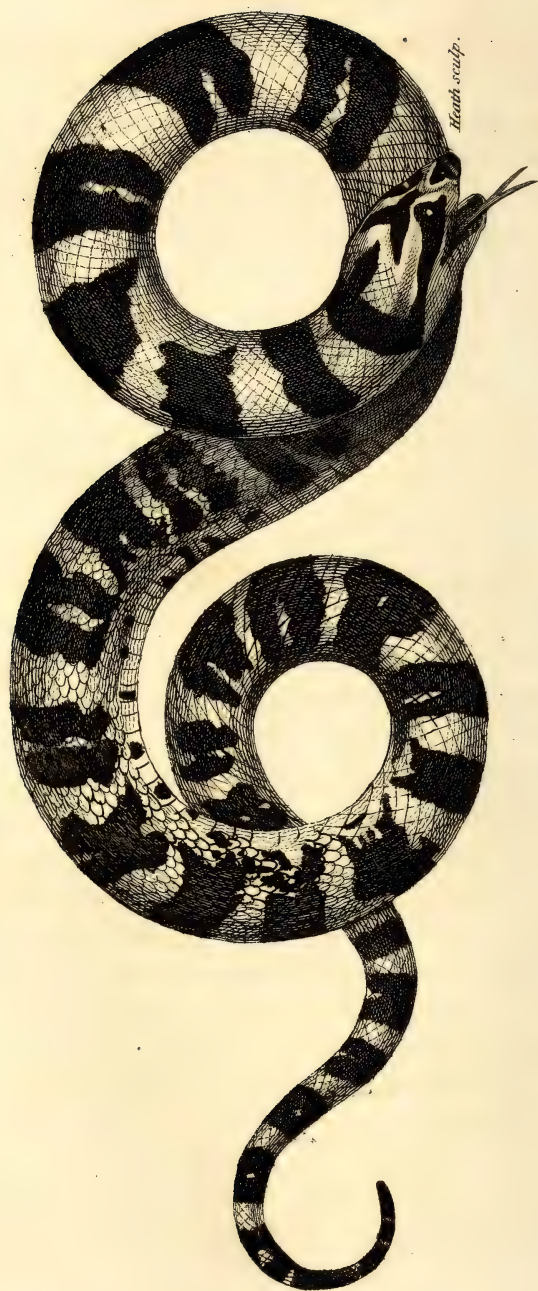
Coluber Constrictor. *Lin. Syst. Nat. p. 385.*

Abdominal scuta 186, subcaudal scales 92.

“THIS,” says Catesby, “is a large and very long snake; some being six feet in length: they are all over of a shining black, never changing their colour, and are very nimble and beneficial in killing rats, which they pursue with wonderful agility to the roofs and all parts of houses and barns, where rats are able to run, for which service they are preserved by most of the inhabitants: they are bold and furious, leaping at and biting those that attack them, though no harm ensues; their bite not being venomous: it is commonly said in Carolina that they will attack and swallow Rattle-Snakes: it is certain most or all snakes will devour one another, not only of their own but of other kinds, which I have often seen; one, after a long struggle, swallowing another but little less than itself. They are the most numerous of all snakes.”

“Many ridiculous, frights,” says Mr. Pennant, “have happened from this innocent reptile. As every one in America is full of the dread of the Rattle-Snake, they are apt to fly at the sight of any of the serpent kind. This pursues, soon overtakes, and twisting round the legs of the fugitive,





Head sculp.

VIPER-HEADED SNAKE.

soon brings him to the ground; but he happily receives no hurt, but what may result from the fright; all the mischief this species does is to the housewives, for it will skim their milk-pans of the cream, and rob their hen-roosts of all the eggs.”
—*Arct. Zool. Append. p. 92.*

VIPER-HEADED SNAKE.

Coluber Viperinus. C. albido-griseus, fasciis transversis nigricantibus apice bifidis macula capitis bifurcata nigra, abdomine utrinque fusco maculato.

Pale-grey Snake, with blackish brown transverse bands, bifid towards their extremities, head marked by a bifurcated black spot, and sides of the abdomen spotted with brown.

Abdominal scuta 166, subcaudal scales 87.

THIS species is described by Seba, and is an animal of considerable elegance: its length is about three feet: its habit moderately slender, yet strong, and its colour very pale grey or whitish, fasciated throughout its whole length, by nearly equidistant black or very deep-brown bands, which, as in the Linnæan *Coluber Æsculapii*, are divided beneath about half way upwards by a narrow white stripe: the head is covered in front with large scales, and marked on the top by a black patch of similar form to that on the head of the Viper, except that the two divisions are more acute: on each side the head, across the eyes, is a longitudinal black stripe, communicating with the first dorsal bar; and the tip of the nose is also

the same colour: on the abdominal scuta are scattered a few small blackish or dusky spots of different size and shape: the skin is smooth and glossy. Seba considers this snake as a kind of Viper, but, according to the observations of Mr. Merrem, it is destitute of fangs, and is consequently an innocuous species. It is a native of America.

PLICATILE SNAKE.

Coluber Plicatilis. C. fusco-flavescens, subtus pallidus, fascia utrinque laterali fusco-ferruginea albido maculata.

Yellowish-brown Snake, pale beneath, with a lateral dusky stripe on each side the body marked by a row of white spots.

Coluber plicatilis. Lin. Syst. Nat. p. 376. Mus. Ad. Frid. p. 23.

Serpens Bali-Salan-Boekit. Seb. 1. t. 57. f. 5.

Abdominal scuta 131, subcaudal scales 46.

A MODERATELY large species, generally measuring between two and three feet, or more, in length: colour yellowish brown, with a dusky, and sometimes reddish, lateral stripe immediately above the scuta, formed by a row of confluent dusky spots with white centres: abdomen pale, marked with three, and sometimes four, rows of small dusky spots: head covered in front with large scales: snout obtuse: tail thick, and rather obtuse. The specimen of this snake described by Linnæus in the *Museum Adolphi Friderici* seems to have been rather small. The Count de Cepede informs us, that the specimen in the King of

France's Museum measured more than six feet in length.

CHAIN SNAKE.

Coluber Getulus. C. nigro-violaceus, fasciis angustis transversis distantibus luteis, super latera bifidis, in abdomine tessellatis.

Blackish-violet Snake, with narrow, distant, transverse, gold-coloured bands, divaricating on the sides, and tessellated on the abdomen.

Coluber Getulus. Lin. Syst. Nat. p. 382.

Chain Snake. *Catesb. Carol. 2. pl. 52.*

Abdominal scuta 215, subcaudal scales 44.

ONE of the most elegant of the North American snakes, as well as the most singular in its pattern: its general length is about three feet, and its proportions nearly those of the common English Snake: the colour of the whole animal is an extremely deep violet, so dark as to appear black on a cursory view, while throughout the whole length, from the head to the end of the tail, are regularly disposed numerous, equidistant, transverse rings or narrow bands of a bright yellow colour, each dividing on the sides before it passes under the abdomen, and being of an irregularly angular outline, more especially on the abdomen, which, in consequence, appears as if tessellated with square yellow spots: the head is small, of a somewhat angular shape, and covered in front, as in most other innocent snakes, with large scales: the tail is of moderate length, measuring about a fifth part of the whole, and gradually tapers

to the extremity. This snake is found in Carolina, Virginia, &c. frequenting moist woods, and shady places, and preying on Lizards, &c. In the British Museum is a large specimen which appears to have been taken in the act of swallowing a pretty large lizard (*Ameiva*), and in consequence of which the jaws are full as much dilated as those of the *Coluber corallinus* figured in a similar situation by Seba, and represented also in the present work.

BROAD-NOSED SNAKE.

Coluber Platurinus. C. albus fusco-maculatus, corpore fasciis latis fuscis annulato.

White Snake, spotted with brown, and annulated with broad brown zones.

Serpens Guineensis rarissima Millio dicta. Seb. 2. t. 83. f. 3?

A HANDSOME species: habit somewhat resembling that of the *Col. Natrix*, but the tail rather more slender in proportion: back slightly carinated, sides somewhat sloping, and abdomen flattish: colour of the whole animal an equal variegation of broad blackish-brown and white bands, equidistant from each other, and entirely surrounding the respective parts: the white bands are spotted with black: head rather large than small, covered with large scales of a black-brown colour, elegantly separated from each other by intervening white spaces, so that the head appears marked with large black spots on a white ground:

nose abrupt or truncated : tail very long, slender, and gradually tapering to the extremity : length of the whole animal about three feet and a half : scales of moderate size, ovate, and not carinated. Described from a specimen in the Museum of Dr. William Hunter. Native country unknown.

FULVOUS SNAKE.

Coluber Fulvus. *C. fulvus, fusco maculatus, corpore fasciis nigris annulato, cauda brevissima.*

Fulvous Snake, spotted with brown, and annulated with blackish zones, with very short tail.

Coluber fulvus. *Linn. Syst. Nat. p. 381.*

Abdominal scuta 218, subcaudal scales 31.

VERY much allied in the disposition of its colours to the preceding ; the body being marked by alternate black and yellowish zones, the yellowish parts spotted with ferruginous : length about a foot and half : tail very short, being scarcely more than a twelfth of the whole length : the head is brown above, and covered with large scales. Native of North America.

SHORT-TAILED SNAKE.

Coluber Brachiurus. *C. ferrugineus, subtus albedo-flavescens, squamis subhexagonis, cauda obtusa brevissima.*

Ferruginous Snake, yellowish white beneath, with subhexagonal scales, and extremely short obtuse tail.

Coluber albus? *Lin. Syst. Nat. p. 378. Mus. Ad. Frid. p. 24. t. 14. f. 1.*

Stumpfschwänzige Natter. *Merrem Beytr. 2. p. 36. t. 37.*

Abdominal scuta 170, subcaudal scales 26.

DESCRIBED from a specimen in the Museum of Dr. William Hunter. Length about a foot and half: habit resembling that of the genus *Anguis*: head of similar diameter with the neck and body, but slightly tapering at the nose, and covered in front with large scales: those on the remainder of the upper parts all hexagonal, and rather large in proportion to the size of the animal: colour ferruginous brown, the skin appearing between the scales: beneath yellowish white: scuta narrow: tail extremely short, scarce measuring two inches, and tapering pretty suddenly to an obtuse point. Native country unknown.

This seems to be the species described and figured by Mr. Merrem under the title of *Stumpfschwänzige Natter*, and which he, with great probability, supposes to be the *Coluber albus* of Linnæus, the description in the *Museum Adolphi Frederici* agreeing in all particulars except that of colour, and it appears pretty clearly that Linnæus

must have described a specimen which had lost its colour by being long preserved in spirits. Its native country, according to Linnæus, is India.

BLUE-GREEN SNAKE.

Coluber Viridissimus. C. cæruleo-viridissimus, dorso subpurpurascens, abdomine subalbente, scutis medio dilatatis.

Vivid blue-green Snake, with a tinge of purple on the back, and whitish abdomen with the scuta dilated towards the middle.

Coluber viridissimus. Lin. Syst. Nat. p. 388. Mus. Ad. Frid. 2. p. 46.

Serpens Surinamensis Flosculus dictus. Seb. 2. t. 67. f. 1, 2.

Serpens Americana cærulea Dipsas dicta? Seb. 2. t. 3. f. 2.

Abdominal scuta 217, subcaudal scales 122.

A VERY elegant species, of middling size, growing to the length of about three feet: head slightly obtuse, of moderate size, covered with very large scaly plates: remainder of the upper parts with ovate scales: colour of the whole animal a very fine strong blue-green, with a suffusion of purple combined, especially towards the back: abdomen pale or whitish green: tail of moderate length, and slender. Linnæus observes that the abdominal scuta are of a wider or more dilated form in the middle than in other snakes: the colour appears to vary, so as to exhibit more or less of the blue tinge, which sometimes becomes the predominant colour, and in such specimens the abdomen is paler or whiter than in others. There can be little doubt but that the specimens figured on plate 67

of the second volume of Seba, under the name of *Flosculus*, are of this kind; the colour being pale blue, with a slight tinge of violet down the back, and the abdomen white. This beautiful snake is a native of Surinam, and is a harmless species.

LUTRIX SNAKE.

Coluber Lutrix. *C. plumbeus, dorso aurantio, abdomine flavo.*

Lead-coloured Snake, with orange-coloured back and yellow abdomen.

Coluber Lutrix. *Lin. Syst. Nat. p. 275.*

Serpens eximia Africana crocea, fronte albo. *Seb. 2. t. 86. f. 5.*

Duberria. *Seb. 2. t. 1. f. 6?*

Abdominal scuta 134, subcaudal scales 27.

THIS is a small but elegant Snake, usually measuring nine or ten inches or near a foot in length, and being rather thick in proportion: the colour is described by Linnæus as yellow above and beneath, and blueish on the sides: he quotes, however, no figure as a representative of the species, but it is probably the *Serpens eximia Africana crocea fronte albo* of Seba, vol. 2. pl. 86. f. 5. which is said by that author to be of an orange-colour above, with the upper part of the head and the abdomen white. It also seems to be the *Duberria* of the same author, figured at pl. 1. f. 6. which is described as blue above, with a middle range of small red specks, brown on the sides, and cinereous yellow beneath, and supposed by Seba to be a native of Ceylon, as the orange-

coloured one was of Africa. Linnæus assigns India as the native country of his animal. It probably varies in colour, a specimen in the British Museum being entirely of a lead-colour above, and white beneath: the scuta very narrow, and forming a white vitta or band down the whole under part of the animal, edged on each side by a line of subtrigonal black spots with descending points; the whole agreeing most accurately with the first-mentioned figure in Seba, though differing as to colours. To this I may add, that in Sir Hans Sloane's copy of that work, now in the British Museum, the above figure is coloured as in the specimen just mentioned, in opposition to the printed description of the author, in which there may probably have been some mistake.

VAR. ?

Schmahlbauchigte Natter. *Merrem Beytr.* 1. p. 7. t. 1.

THIS, which is described and figured by Merrem, is perhaps no other than a variety of the Lutrix, differing only in having the tail rather more obtuse than in the Seban figures above mentioned: its colour is said by Merrem to be pale chocolate-brown above, blueish on the sides, and yellow on the abdomen: the abdominal scuta 117, and the subcaudal scales 38.

GRAPHIC SNAKE.

Coluber Graphicus. C. cinereus, supra lineis nigricantibus characteriformibus notatus, abdomine pallido fusco variato.

Cinereous Snake, marked above with blackish characteriform lines, and pale abdomen variegated with brown.

Serpens de Moculo Americana. *Seb. 2. t. 75. f. 3. ?*

Abdominal scuta 143, subcaudal scales 73.

SIZE of *Berus*: colour above glaucous, with a tinge of ferruginous, and marked all over the back and sides with narrow black characteriform streaks in different directions, and edged on their exterior side with small longitudinal whitish marks, the edges of the scales being of that colour: abdomen pale or white, the edges or sides of the scuta (and in some parts the middle) marked with large square blackish-brown patches: tail long and slender, abdomen separated from the upper parts by a very distinct side-line: head scarce larger than the neck, of a longish form, and covered with large scales: behind each eye a large and long triangular dark patch, including an oval white one: described from a specimen in the British Museum. It also occurs in the Museum of Dr. Hunter.

COACH-WHIP SNAKE.

Coluber Flagellum. *C. longissimus, gracillimus, fuscus, abdomine pallido.*

Extremely long, slender, brown Snake, with pale abdomen.

Coach-Whip Snake. *Catesb. Carol. 2. pl. 54.*

THIS is a very long and slender species, measuring from four to six feet or more in length: its colour is an uniform dusky brown, palest beneath: it is, according to Catesby, its first describer, "very active and nimble, running very swiftly: inoffensive; yet the Indians report, not without gaining many proselytes to their silly belief, that it will, by a jerk of its tail, separate a man in two parts." It is a native of North America, and not uncommon in Carolina and Virginia.

CENCHOA SNAKE.

Coluber Cenchoa. *C. albidus gracilis, fasciis transversis rhombæatis fuscis, capite subgloboso.*

Slender whitish Snake, with transverse rhomboidal brown bands, and subglobose head.

Coluber Cenchoa. *Lin. Syst. Nat. p. 389.*

Anguis de *Cencoatl* Americanus. *Seb. 2. t. 16. f. 2, 3.*

Abdominal scuta 210, subcaudal scales 124.

A REMARKABLE species, growing sometimes to the length of three or even four feet, yet scarcely exceeding the thickness of a swan quill: head very large, and nearly globular: neck extremely

thin: tail very long, measuring near a third part of the whole animal, and gradually tapering to the extremity: colour white or yellowish, marked throughout the whole upper part from head to the end of the tail, with numerous transverse rhomboidal bars or patches of brown, the points descending on each side.

CLOUDED SNAKE.

Coluber Nebulatus. *C. subflavescens maculis irregularibus fuscis nebulatus, abdomine pallido fusco maculato.*

Yellowish Snake, clouded with irregular brown spots, with pale abdomen speckled with brown.

Coluber nebulatus. *Linn. Syst. Nat. p. 388.*

Serpens Ceilonica maculata. *Seb. 1. t. 100. f. 4.*

Serpens Dipsas lentiginosa Amboinensis. *Seb. 2. t. 44. f. 2?*

Abdominal scuta 185, subcaudal scales 81.

SIZE moderate, measuring about two feet in length: habit rather slender: head rather large, and covered with large scales: tail of middling length, tapering rather suddenly from the body, and gradually decreasing to the tip: colour of the whole animal yellowish brown, clouded with irregular deep-brown or blackish variegations, forming a sort of bands nearly surrounding the body, with smaller spots and frecklings intermixed: under parts pale, speckled with brown: native of America: well figured in the work of Seba. The *Coluber Zeylonicus*, of the Gmelinian edition of the *Systema Naturæ* can hardly be considered as distinct from the present species.

ORNAMENTED SNAKE.

Coluber Ornatus. *C. nigerrimus, maculis albis fusciosis abdomine albo.*

Jet-black Snake, with white flower-shaped spots and white abdomen.

Serpens Jaculus Amboinensis perelegans. *Seb. 2. t. 7. f. 1.*

Serpens Ceilanica pomposa veste ornata. *Seb. 2. t. 61. f. 2.*

Serpens Ceilonica elegantissima. *Seb. 1. t. 94. f. 7.*

A VERY elegant and singular species: habit long and flagelliform; measuring about three feet or more in length: colour of the upper parts jet black, with white variegations, of which those on the head and fore parts, for the length of a few inches, generally consist of transverse white bars, while those on the remainder are disposed into the form of rounded or ovate spots of different sizes, and representing either rosaceous or tetrapetalous flowers scattered over the surface, and accompanied by smaller simple spots and specklings: abdomen white: head rather small than large, and of a longish form: tail rather long, slender, and tapering to a sharp point: native of some of the West-Indian islands, Martinico, &c. and, according to Seba, of the East-Indian islands also, as Ceylon and Java. The pattern varies a little in different individuals, but the general appearance is very similar in all.

VAR.?

SEBA describes and figures a snake extremely allied to the above in general appearance and proportions, but of very different colours; the ground-colour being a yellowish green, with the upper parts not variegated with floscular spots, but by numerous, short, double, red, transverse bands: a snake of this kind is preserved in the British Museum, but, from having been long preserved in spirits, exhibits only a yellowish white ground-colour with dusky variegations. See Seba 2, t. 56. f. 1.

 PINTADO SNAKE.

Coluber Meleagris. *C. niger, albo confertim punctatus, abdomine albo.*

Black Snake, thickly speckled with white, and with white abdomen.

Serpens Ceilonica excellentissima eleganter picta. *Seb. 2. t. 32. f. 2.*

Serpens Babylonica Cenchrus dicta. *Seb. 2. t. 52. f. 3.*

Serpens Hispalensis frontem præ se ferens venustissimam. *Seb. 2. t. 56. f. 2.*

ALLIED in some degree to the preceding, but a perfectly distinct species: habit long and slender, measuring about two feet in length: colour above jet black, marked in a rhomboid pattern with numerous small roundish white specks, regularly disposed by fours over the whole upper surface, till

the commencement of the tail, where they become single, and are scattered over that part to the tip: abdomen white: head rather small and short, but rather sharp-snouted: white, with black variegations, a stripe passing across the nose, and a second across the eyes: the beginning of the neck, or rather the back part of the head, marked by a pair of short longitudinal white streaks; tail of moderate length, tapering rather suddenly from the vent, and from thence gradually to the tip: described from a beautiful specimen in the Leve-rian Museum: Seba represents this species as a native of Ceylon, &c.

MILIARY SNAKE.

Coluber Miliaris. *C. fuscus, albo punctatus, abdomine albo.*

Brown Snake, speckled with white, and with white abdomen.

Coluber Miliaris. *Lin. Syst. Nat. p. 380.*

Abdominal scuta 162, subcaudal scales 59.

LENGTH about a foot and half: thickness of a finger: colour on the upper parts brown, each scale marked by a white spot: beneath white: head ovate, with glaucous scales blackish in the middle: lips marked by dusky streaks: tail about a fifth of the whole length, and not very slender: native of South America.

PEARLY SNAKE.

Coluber Perlatus. *C. perlaceus, capite caudaque thalassinis, vertice rubro.*

Pearl-coloured Snake, with sea-green head and tail; the former marked by a red spot.

Serpens ex Nova Hispania, a *J. Fabro Lynceo*, p. 774, delineata & descripta sub nomine Hispanico *Iztac*. *Seb. 2. t. 57. f. 2.*

LENGTH about two feet and a half: habit rather thick than slender, except towards the end of the tail, which gradually tapers to a very slender point: body pearl-coloured, the edges of the scales being black; thus forming reticular crossings of that colour: head large, of a sea-green colour, and covered with small scales, except about the nose, and between the eyes: on the top of the head a large deep red spot pointing backwards: tail of moderate length, sea-green, with a few distant, scattered black spots: abdomen grey: native of New Spain.

MARBLED SNAKE.

Serpens bucculenta Bæotica. *Seb. 2. t. 57. f. 3.*

LENGTH about three feet, and rather thick in proportion to its length: colour of the upper parts brown, variegated with white clouds: abdomen clouded in a similar manner: head rather thick, covered with large scales: those on the body ra-

ther large and of an ovate shape: tail about a third of the whole length, very thick at its origin, but gradually tapering to a slender point: native of Bœotia.

AMMOBATES.

Coluber Ammobates Africanus ex Guinea. Seb. 2. t. 78. f. 2.

LENGTH about three feet and a half, and moderately thick in proportion: colour a uniform deep blueish grey, both above and beneath, with a row of moderately distant, round, dusky spots on each side the body near the abdomen: head rather large, covered with large scales, and of a rufous brown above: the scales on the whole upper parts of the body and tail are rather large, of an ovate shape, and finely fimbriated on the edges; tail of moderate length, and tapering to the extremity, but not very slender: native, according to Seba, of Guinea.

CROSSED SNAKE.

Coluber Crucifer. *C. albus serie dorsal triplici macularum nigrarum, intermediis cruciatis.*

White Snake, with a triple dorsal series of black spots, those of the middle range cross-shapēd.

Serpens Ceilonica crucifera. *Seb. 2. t. 12. f. 2.*

Perlfarbne Natter. *Merrem Beytr. 2. t. 9.*

Abdominal scuta 184, subcaudal scales 66.

A SMALLISH species, of about a foot and a half in length: head rather small, and covered with large scales: neck slender: body of moderate thickness: tail tapering gradually to the extremity, which is slightly pointed: colour of the whole animal white, with a pearly tinge, and marked along the back by a series of small black spots in the form of a St. Andrew's Cross: along each side is also a row of black spots, but less distinctly cross-shaped than those of the middle range: abdomen white, each fourth or fifth scutum being marked at its edge or juncture with the sides by a black spot: head marked by black sutures. This species is, according to Seba, a native of Ceylon.



PERUVIAN SNAKE.

PERUVIAN SNAKE.

Coluber Peruvianus. C. albo nigroque variatus, abdomine roseo.

Black-and-white Snake, with rose-coloured abdomen.

Serpens Peruviana elegantissima & rara. Seb. 2. t. 21. f. 1.

THIS highly elegant Snake is described by Seba, who informs us that it is a native of Peru, and a rare species in European collections: the upper part of the animal is variegated with black and white spots and marks; the sides tinged with yellowish red, while the belly or under part is of a light red or rose-colour: it is said to be an innocent species, and to be chiefly found in New Spain: it is one of those snakes which do not appear to be described by Linnæus, nor is the number of its scuta and squamæ known: its size seems to be nearly that of the common English Snake, but its form is rather thicker in proportion. Mr. Merrem considers it as a variety of the *Colluber pullatus*, but the peculiar form of its scales, and some other circumstances, seem to forbid this supposition. The original specimen itself seems to have been in the Linkian collection at Leipzig; since it is figured, apparently from the same drawing with Seba's, in the *Physica Sacra* of Scheuchzer, vol. 7. t. 630.

BANDED SNAKE.

Coluber Pethola. *C. fusco-ferrugineus fasciis transversis angustis albidis, abdomine albedo.*

Ferruginous-brown Snake, with narrow transverse whitish bands, and whitish abdomen.

Coluber Pethola. *Lin. Syst. Nat. p. 387.*

Coluber petalarius. *Lin. Syst. Nat. p. 387. Mus. Ad. Frid. p. 35. t. 9. f. 2?*

Abdominal scuta 209, subcaudal scales 90.

LENGTH from two to four feet: colour brown or ferruginous above; pale or white beneath; the colour of the upper part being transversely divided at equidistant intervals by narrow stripes or lines of white running upwards from the abdomen across the back, and thus marking the brown upper part into so many extremely broad zones: head rather small, covered in front with large scales, and marked above by a large, oblong, brown patch: tail of moderate length, tapering to a fine point. This species occasionally varies as to the form of its zones, which in some specimens appear rather like rhomboid transverse patches. It is a native of Africa. The *C. Petalarius* of the *Mus. Ad. Frid.* can hardly be considered as a species distinct from this.

LEMNISCATED SNAKE.

Coluber Lemniscatus. *C. albo-flavescens, zonis triplicatis fusco-ferrugineis.*

Yellowish-white Snake, with triple ferrugineous-brown bands.

Coluber lemniscatus. *Lin. Syst. Nat. p. 286.*

Serpens, &c. *Seb. 2. t. 10. f. 4.*

Serpens annulatus, &c. *Seb. 1. t. 27. f. 4.*

Abdominal scuta 250, subcaudal scales 35.

THIS is a species of considerable elegance, being of a slender habit, and of a white or yellowish colour, marked throughout the whole length, at equal distances, by triple zones of black or deep brown entirely surrounding the body, and each separated from the next adjoining one by a narrow white stripe or line of the ground-colour: the head is rather small, covered with large scales and marked across the snout by a double zone, of which the smallest division passes across the nostrils, and the largest across the eyes: the tail is rather short, and gradually tapers to the tip: the whole animal is of a smooth or shining surface: it sometimes varies in the colour of its zones, which, in a specimen represented by Seba, are purple. It is a native of several parts of Asia.

LINNÆAN SNAKE.

Coluber Linnæi. *C. albidus, zonis transversis nigris sub-bifidis, abdomine nigro variato.*

Whitish Snake, with black sub-bifid transverse zones, and abdomen variegated with black.

Coluber Æsculapii. *Lin. Syst. Nat. p. 380.*

Serpentis Æsculapii species. *Seb. 2. t. 18. f. 4. ?*

Serpens Ceilanica, &c. *Seb. 2. t. 76. f. 2.*

Abdominal scuta 180, subcaudal scales 43.

THIS is much allied in appearance to the *lemniscatus*, generally measuring about a foot and half, or two feet in length: its colour is pale or whitish, with a more obscure cast on the back, and is marked throughout by nearly equidistant black bands, each surrounding the body and divided half way up from the abdomen by a line or narrow stripe of the ground-colour; thus giving a bifid appearance to the lower part of each band: the abdomen is marked into black squares by the alternation of the bands beneath: the head is covered with large scales, and marked on the fore part by a transverse black zone running across the eyes, and at the hind part by a somewhat broader band: the tail is of moderate length, and gradually tapers to a somewhat obtuse point. This snake is a native of South America, but is also said to occur in some parts of Asia. It is by Linnæus termed *Coluber Æsculapii*, but since it is not very probable that it should have been the species dedicated to that deity by the ancients, there seems to be a

peculiar absurdity in the Linnæan trivial name, which is therefore purposely changed.

GLOSSY SNAKE.

Coluber Lubricus. *C. albus, zonis æquidistantibus nigris.*

White Snake, with equidistant black bands.

Coluber lubricus. *Lin. Syst. Nat. Gmel. p. 1101.*

Anguis lubricus Africanus, &c. Seb. 2. t. 43. f. 3.

ALLIED to the *C. Æsculapii* and *lemniscatus*, but marked by single, equidistant, black bands: ground-colour white: head marked across the snout by a black band, and at the top by two oblique stripes nearly meeting at an angle in front: length about a foot and half: skin remarkably smooth and glossy: native, according to Seba, of Africa.

HYGEIAN SNAKE.

Coluber Hygeiæ. *C. albus, zonis subundulatis nigris, capite longitudinaliter nigro fasciato.*

White Snake, with subundulated black zones, and head fasciated longitudinally with black.

Serpens Siamensis tæniolis, &c. Seb. 2. t. 34. f. 5.

Hygiæns Natter. Merrem Beytr. 1. p. 24. t. 6.

A SMALLISH species, of a white colour, barred with numerous and somewhat irregular black bands nearly surrounding the body, and in some parts alternating: head small, large-scaled, and

marked by two broad longitudinal streaks uniting at the top of the snout: tail rather short and sharp-pointed. In the specimen described by Mr. Merrem a narrow dorsal reddish line is continued from head to tail, which is wanting in Seba's specimen. Native, according to Seba, of Siam.

DOMICELLA SNAKE.

Coluber Domicella. *C. albus, fasciis transversis numerosis nigerrimis, subtus alternatim concurrentibus, linea abdominali nigricante.*

White Snake, with numerous jet-black transverse bands meeting beneath, and a blackish abdominal line.

Anguis bicolor elegantissimus Malabaricus. *Seb. 2. t. 54. f. 1.*

Coluber Domicella. *Lin. Syst. Nat. p. 376.*

Var. Coluber. picatus. *Nat. Misc. vol. 9. pl. 340.*

Abdominal scuta 118, subcaudal scales 60.

A VERY elegant and harmless species, of a slender habit in proportion to its length, measuring about two feet or two feet and a half in length, and about half an inch in diameter: colour milk-white, beautifully marked throughout the whole length by very numerous, equidistant, jet-black bands, attenuated on the sides, nearly meeting in an alternate manner under the abdomen, which is also marked by a continued wavy black line through the middle of all the scuta: head very small, covered with large scaly plates, and black, with a middle line of white at the back part: tail rather short, and gradually tapering to a point. Native of India: admirably figured in the work of Seba.

This species appears to vary considerably in the number of its *scuta* and *squamæ subcaudales*. It is pretended that the ladies in India sometimes carry this snake in their bosoms, and hence its trivial name *Domicella*.

CHEQUERED SNAKE.

Serpens Mexicana *Petlacoatl* dicta elegantissima. Seb. 2. t. 63. f. 1.

LENGTH about three feet or more : general proportions those of the *Natrix* : colour of the upper parts yellow, crossed obliquely by red lines, in such a manner as to divide the whole surface into numerous squares or lozenges, consisting of four scales each : head rather small, and oblong ; covered in front with large red scales : tail of moderate length, and gradually tapering to a very slender extremity : abdomen cinereous-yellow, with a few smallish tessellated red patches here and there. Native of Mexico. In the general disposition of its markings this snake is much allied to the *Paragoodo*, pl. 20. of Dr. Russel's Indian Serpents (*Hydrus palustris*. Schneid.) but must be a different species.

BLACK-HEADED SNAKE.

Coluber Melanocephalus. *C. subfuscus, subtus albidus, capite nigro albo striato, fascia collari nigra.*

Brownish Snake, whitish beneath, with black head striped with white, and a black band over the neck.

Coluber melanocephalus. *Lin. Syst. Nat. p. 378. Mus. Ad. Frid. p. 24. t. 15. f. 2.*

Abdominal scuta 140, subcaudal scales 62.

A SMALL species, of about a foot and a half in length: colour pale brown, whitish beneath: head black, with white divisions or streaks on the top and sides, and immediately behind the head is a broad black collar. Native of America? This species appears to vary greatly in the number of its scuta and subcaudal scales.

ANNULATED SNAKE.

Coluber Annulatus. *C. griseus, maculis dorsalibus rotundis fuscis pallido marginatis.*

Grey Snake, with round brown dorsal spots, with pale margins.

Coluber annulatus. *Lin. Syst. Nat. p. 386. Mus. Ad. Frid. p. 34. t. 8. f. 2.*

Vipera Virginiana maculis notata. *Seb. 1. t. 72. f. 6. and 2. t. 13. f. 2.*

Abdominal scuta 190, subcaudal scales 96.

LENGTH about two feet or more: colour grey, with the back marked by a longitudinal series of round or ovate deep brown spots surrounded with pale margins, and becoming occasionally con-

fluent, especially to some distance down the neck : head rather large than small, and covered with large scales : tail of moderate length, and gradually tapering. Native of America. Appears to vary greatly in the number of abdominal and subcaudal scales.

DIPSAS.

Coluber Dipsas. *C. cæruleus, subtus albidus, squamis margine albidis.*

Blue Snake, whitish beneath, with the scales whitish on the edges.

Coluber Dipsas. *Lin. Syst. Nat. p. 386.*

Abdominal scuta 152, subcaudal scales 135.

A RATHER small species : length about a foot and half or two feet : colour bright blue, paler beneath : scales, according to Linnæus, edged with white, and the tail, which is slender and sharp-pointed, marked beneath by a blueish suture : the head rather large, somewhat angulated, ovate-oblong, and obtuse : colour sometimes blueish green : native of Surinam, and said to be a poisonous species. This snake, being avowedly a native of America, is not very happily named by Linnæus ; the *Dipsas* of the ancients being an African Serpent.

NECKLACE SNAKE.

Coluber Monilis. *C. albidus, supra fasciis latis fuscis, collo supra maculis tribus albis.*

Whitish Snake, marked above by broad brown bands, and with three white spots on the neck.

Coluber Monilis. *Lin. Syst. Nat. p. 381.*

Abdominal scuta 164, subcaudal scales 82.

A SMALL species, measuring about a foot and half in length: colour whitish, banded throughout the whole length with very broad transverse brown zones: abdomen plain: head of moderate size, whitish, bordered with brown, and marked by three lengthened brown spots: on the upper part of the neck are three round white spots, forming as it were a half collar on that part: this species is a native of South America.

 RING-BANDED SNAKE.

Coluber Doliatus. *C. lacteus, annulis dorsalibus oratis, approximatis, nigris.*

Milk-white Snake, marked above by large, approximated, oval black rings.

Coluber doliatus. *Lin. Syst. Nat. p. 275.*

Magpie Snake. *Naturalist's Miscellany, vol. 7. pl. 254.*

Abdominal scuta 164, subcaudal scales 43.

A SMALL, but highly elegant, species: general length a foot and half, or two feet: colour milk-white, with a slight cast of cream-colour above, and marked down the whole length by large, oval, jet-black rings, the ends of which approaching

each other on the top of the back, give the appearance of double bars: in some specimens the sides of the body are marked by blackish spots between each of the oval rings. This is a perfectly harmless species, and is a native of Carolina and other parts of North America.

COBELLA SNAKE.

Coluber Cobella. *C. fuscus, fasciis transversis linearibus curvatis albidis, abdomine albo fasciis transversis fuscis.*

Brown Snake, with linear transverse whitish curved bands, and white abdomen with transverse brown bands.

Coluber Cobella. *Lin. Syst. Nat. p. 378.*

Serpentes *Cobellas* dictæ. *Seb. 2. t. 2. f. 5.*

Abdominal scuta 150, subcaudal scales 54.

A SMALL species: general length about ten or twelve inches: colour brown, with numerous curved or undulating, whitish, transverse, linear bands from head to tail: abdomen white or pale, with numerous, alternate, semi-transverse, dusky bands: head of middling size, covered with very large scales: tail thin and taper. This snake varies sometimes in colour, being blackish rather than brown, with similar whitish or pale markings.

ROUGH SNAKE.

Coluber Scaber. *C. griseus, fusco maculatus, squamis elevato-carinatis.*

Grey Snake, spotted with brown, with the scales carinated by a rising point.

Coluber Scaber. *Lin. Syst. Nat. p. 385. Mus. Ad. Frid. p. 36. t. 10. f. 1.*

Rauhe Natter. *Merrem. Beytr. 1. p. 34. t. 9.*

Abdominal scuta 228, subcaudal scales 44.

LENGTH about a foot and half: habit slender: head small, and marked at the back or neck with a few transverse streaks: the scales on the remainder of the animal small, and marked by a rising point on the back of each: thus causing a very perceptible roughness on the skin: colour grey, marked throughout with a triple row of somewhat irregularly rhomboid and alternate brown spots with paler centres: abdomen pale, and marked on the sides with minute characteriform brownish streaks: tail slender: native of India.

ALGERINE SNAKE.

Coluber Maurus. C. fuscus, lineis duabus dorsalibus nigris, lateribus nigro transversim fasciatis, abdomine atro.

Brown Snake, with two black dorsal lines, the sides transversely fasciated with black, and black abdomen.

Coluber maurus. Lin. Syst. Nat. Gmel. p. 1098.

Abdominal scuta 152, subcaudal scales 66.

OF middle size: colour on the upper parts brown, with two black dorsal lines, from which descend on each side several black bands: abdomen black: native of Algiers.

 HANNASCH.

SLIGHTLY described by Forskal, who tells us that it is entirely black, about a cubit in length, of the thickness of a finger, and that its bite excites a swelling, though no otherwise dangerous: native of Arabia.

 RED-THROATED SNAKE.

Coluber Jugularis. C. niger, jugulo sanguineo.

Black Snake, with blood-red throat.

Abdominal scuta 195, subcaudal scales 102.

COLOUR entirely black, except the throat, which is blood-red: native of Ægypt: described by Hasselquist.

SIPEDON.

Coluber Sipedon. *Lin. Syst. Nat. p. 379.*

NATIVE of North America: observed by Kalm: colour entirely black, or deep brown: abdominal scuta 144, subcaudal scales 73.

 RED-SPOTTED SNAKE.

Coluber Coccineus. *C. niger, dorso flavo maculis rubris, abdomine pallido.*

Black Snake, with yellow back spotted with red, and pale abdomen.

Coluber coccineus. *Lin. Syst. Nat. Gmel. p. 1097,*

Abdominal scuta 175, subcaudal scales 35,

LENGTH from two to three feet or more: habit rather slender: head small: ground-colour black, with about twenty-three bright red ovate or obtusely square spots along the back; the spaces between being yellow: belly pale: native of South America.

SPOTTED-SIDE SNAKE.

Coluber Ordinatus. C. cæruleo-virescens, linea spinali albida, lateribus fusco-maculosis.

Blueish-green Snake, with whitish spinal line, and sides spotted with brown.

Coluber ordinatus. Lin. Syst. Nat. p. 379.

Green Spotted Snake. *Catesb. Carol. 2. pl. 53.*

Spotted Ribband Snake? *Catesb. 2. pl. 51.*

Abdominal scuta 138, subcaudal scales 72.

GENERAL length from two to three feet: colour blueish green, with blackish clouds and spots along the sides: ridge of the back whitish: native of Carolina.

WHITE-SKINNED SNAKE.

Coluber Candidus. C. candidus, maculis dorsalibus ovatis magnis fuscis.

White Snake, with large ovate brown dorsal spots.

Coluber Candidus. Lin. Syst. Nat. p. 384. Mus. Ad. Frid. p. 33. t. 7. f. 1.

Serpens Æculapii Brasiliensis. Seb. 2. t. 66. f. 3, 4.

Abdominal scuta 220, subcaudal scales 50.

HABIT rather slender: length from two to three or four feet, or more: colour milk-white, marked throughout with a row of very large, ovate, deep-brown, equidistant spots or patches: each of the white scales on the plain parts is also marked in the middle with a brown speck: head brown, and covered with large scales: tail of moderate length,

gradually tapering to the extremity: native of South America.

BROWN SNAKE.

Coluber Fuscus. C. cinereo-fuscus, abdomine pallido, macula postoculari fusca.

Cinereous-brown Snake, with pale abdomen, and brown spot behind the eyes.

Coluber fuscus. Lin. Syst. Nat. p. 388. Mus. Ad. Frid. p. 32. t. 17. f. 1.

Seb. 2. t. 71. f. 1. t. 72. f. 1. and t. 87. f. 1.

Abdominal scuta 149, subcaudal scales 117.

A MODERATELY large species, growing to four feet or more in length: colour cinereous brown, sometimes tinged with blueish, or with olive colour, or ferruginous: abdomen pale: head rather small than large, and marked behind the eyes with an oblong brown patch: tail about a fifth of the whole length, gradually tapering to a point. Native of several parts of Asia.

GREY SNAKE.

Coluber Canus. *C. canus, fasciis transversis obscuris, lateribus albo punctatis.*

Grey Snake, with obscure transverse brown bands, and sides speckled with white.

Coluber canus. *Lin. Syst. Nat. p. 382. Mus. Ad. Frid. p. 31. t. 11. f. 1.*

Abdominal scuta 188, subcaudal scales 70.

DESCRIBED by Linnæus in the Museum Adolphi Friderici: the specimen was about a foot long, and of scarcely a finger's thickness: head ovate, angular, and covered with large scales: body grey, with obscure brownish transverse bands, on each side of which are two white specks, thus constituting a row on each side the body near the abdomen: tail about a fifth of the whole length, slender, and round: native of South America.

 CAPE SNAKE.

Serpens Africana annulata, ex promontorio Bonæ Spei. *Seb. 2. t. 46. f. 4.*

LENGTH about two feet: colour above pale blue, with numerous moderately distant, double, red bands, like those of the Linnæan *C. Æsculapii*, but narrower, surrounding the body: head small, covered with large scales, and marked by a broad red band passing across the eyes; at the back of the head by a much broader band: abdomen pale rufous: tail of moderate length, gradually tapering

to a sharp point: native, according to Seba, of the Cape of Good Hope.

ANGULAR SNAKE.

Coluber Angulatus. C. subfuscus, fasciis transversis lanceolatis nigricantibus, subtus alternatim concurrentibus.

Brownish Snake, with broad transverse lanceolate blackish bands, meeting alternately beneath.

Coluber angulatus. Lin. Syst. Nat. p. 377.

Serpens vel Sepedon Americanus. Seb. 2. t. 73. f. 1?

Abdominal scuta 117, subcaudal scales 70.

LENGTH from two to three feet: colour pale brown, with broad, equidistant, transverse, blackish lanceolate fasciæ throughout the whole length, continued round the body, but in an irregular or alternating manner beneath the abdomen: head rather small, and covered with large scales; those on the rest of the body of moderate size, and disposed into about nineteen longitudinal rows; and as each scale is pretty strongly carinated, the body appears as it were polygonal or angular: tail of moderate length, and gradually tapering to the tip: native of the East Indies, according to Linnæus, but, if a snake described in Seba and quoted by Linnæus, be really the same species, it occurs also in South America: it is observed to vary considerably in the number of its abdominal and subcaudal scales.

CÆRULEAN SNAKE.

Coluber Cæruleus. *C. cærulescens, squamis altero latere albis, abdomine albo.*

Blueish Snake, with the scales white on one side, and white abdomen.

Coluber cæruleus. *Lin. Syst. Nat. p. 377.*

Abdominal scuta 165, subcaudal scales 24.

ALLIED in colour to the Linnæan *Dipsas*, being blue above, with the lower margin of the scales white: abdomen white: head of moderate size: tail rather short, slender, and tapering to the tip: general length about a foot and a half or two feet: native of South America.

 LIVID SNAKE.

Coluber Saturninus. *C. lividus, fasciis angustis transversis cinereis.*

Livid Snake, with narrow transverse cinereous bands.

Coluber Saturninus. *Lin. Syst. Nat. p. 384. Mus. Ad. Frid. p. 32. t. 9. f. 1.*

Abdominal scuta 147, subcaudal scales 120.

DESCRIBED by Linnæus in the Museum Adolphi Friderici: head broader than the body, depressed, oblong, lead-coloured: eyes very large: trunk livid, somewhat clouded above with narrow cinereous bands: tail round, and measuring about a third of the whole animal: a harmless species: native of South America: length about two feet: habit rather slender.

RED BEAD SNAKE.

Coluber Guttatus. C. niger, dorso flavo maculis rubris, abdomine fusco variegato.

Black Snake, with yellow back spotted with red, and abdomen variegated with dusky.

Coluber Guttatus. Lin. Syst. Nat. p. 385.

Bead Snake. *Catesb. Carol. 2. t. 60.*

Abdominal scuta 227, subcaudal scales 60.

DESCRIBED by Catesby: general length about two feet, but grows to a much greater length: ground-colour black, deepest on the back and faintest on the belly, where it is disposed into a kind of squarish variegations: the upper part of the body is adorned with large spots of a bright red colour, between which, at regular distances, are yellow spots: the sides are spotted with black: the tail measures about a sixth of the whole length. This species is a native of Carolina, and, according to Catesby, resides under ground, being rarely seen on the surface, but is often dug up in digging for potatoes, &c. and is a perfectly harmless animal. It seems greatly allied, except in the number of abdominal and subcaudal scales, to the *Red Spotted Snake* before described.

DOUBTFUL SNAKE.

Cobra Americana. *Seb.* 2. t. 21. f. 3.

LENGTH about fifteen inches, and moderately thick in proportion: head rather large, and covered with small scales, neck thick: colour white, with extremely broad numerous transverse red bars, many of which are bifid on the sides; tail rather taper but not sharp-pointed, and marked above by a deep red undulating stripe of alternately confluent marks in some degree similar to those on the viper, to which tribe this species seems to belong: the head is white above, with two small oblong red marks in the middle: abdomen pale red: described merely from Seba's figure. Notwithstanding the viperine character mentioned in Seba's very slight description, the engraving has something of the appearance of an *Anguis*, and must be considered as doubtful.

 AGILE SNAKE.

Coluber Agilis. *C. fasciis alternis albis & fuscis, capite parvo, cauda brevi.*

SNAKE with alternate white and brown bands, small head, and short tail.

Coluber agilis. *Lin. Syst. Nat. p. 381. Mus. Ad. Frid. p. 27. t. 21. f. 2.*

Abdominal scuta 184, subcaudal scales 50.

DESCRIBED by Linnæus in the Museum Adolphi Friderici. Head small, and covered with large

scales: eyes small: teeth minute: body slender and smooth; length about a span: colour white, with numerous, broad, brown bands, surrounding the body, but narrower below than above: scales on the body smallish, the skin, according to the figure in the work above mentioned, appearing between them, so as to cause a kind of reticular variegation on the brown annuli: tail short, taper, but rather obtuse: native of Ceylon.

FLAT-NOSED SNAKE.

Coluber Simus. *C. nigricans, albo transversim fasciatus, nasosimo.*

Blackish Snake, with white transverse bands, and turned-up nose.

Coluber simus. *Lin. Syst. Nat. p. 275.*

Abdominal scuta 124, subcaudal scales 46.

LENGTH about a foot and half: head rather large, roundish, the nose flat in front, and turned up into a slightly pointed tip: between the eyes a black curved band, and on the top of the head a white cross-shaped mark with a black central spot: body blackish or deep-brown, with white variegations so disposed as to form a kind of transverse bands: abdomen dusky: native of North America.

PADERA SNAKE.

Coluber Padera. *C. albus, maculis dorsalibus fuscis lineola connexis, lateralibus simplicibus.*

White Snake, with blackish dorsal spots connected by a line, and simple lateral spots.

Coluber Padera. *Lin. Syst. Nat. p. 382.*

Abdominal scuta 198, subcaudal scales 56.

OF this snake little more seems to be known than what may be collected from the short description of its colours given in the *Systema Naturæ*, viz. that it is white, with a dorsal range of double black spots connected by a common line; the sides being marked by a row of simple spots of similar colour. It is a native of India.

AUSTRALASIAN SNAKE.

Coluber fusco-nigricans, flavo punctatus, scutis brevissimis, abdomine fusco flavoque nebulato.

Blackish-brown Snake, speckled with yellow, with very narrow scuta, and abdomen clouded with brown and yellow.

A LARGE snake, measuring nine or ten feet in length, and being rather slender in proportion: colour above very deep or blackish brown, variegated with numerous yellow specks, which variegation is chiefly owing to each of the black or dark-brown scales being marked on the middle by an ovate yellow spot: on the sides of the body many of the scales are yellow on one half and black on the other; and by degrees appear more

tinged with yellow as they approach the abdomen, which is clouded with a mixture of brown and yellow: the head is small, covered in front, as in most of the innoxious snakes, with moderately large scales: the teeth rather large, and so far as could be judged from the dried specimens hitherto examined, unaccompanied by any poisonous fangs: the abdominal scuta remarkably narrow, scarce extending from side to side more than a fourth of the diameter of the body: the tail short, and gradually tapering to a slender point. The number of abdominal scuta and subcaudal scales, from the imperfect manner in which the dried skins have been imported, is not ascertainable. An extremely good general representation of this species may be found in Mr. White's Journal of a Voyage to New South Wales, as well as of some other Australasian snakes, which have hitherto been only described in a cursory manner, from dried specimens.

CYANEAN SNAKE.

Coluber Cyaneus. *C. cyaneus, subtus virescens.*

Deep-blue Snake, greenish beneath.

Coluber cyaneus. *Lin. Syst. Nat. p. 380.*

Anguiculus Surinamensis cyaneus. *Seb. 2. t. 43. f. 2.*

Abdominal scuta 119, subcaudal scales 110.

A RATHER small species: allied in colour, as well as in shape, to the *Ahetulla*, being of a deep blue above, and greenish beneath: head of mode-

rate size, longish, and large-scaled : tail long, gradually tapering to a point : native of South America. In Seba's specimen, referred to by Linnæus, a narrow red line divides the sides from the abdomen.

SIBON SNAKE.

Coluber Sibon. *C. ferrugineus albo nebulatus*, corpore subcompresso.

Ferruginous Snake, clouded with white, with subcompressed body.

Coluber Sibon. *Lin. Syst. Nat. p. 383.*

Serpens Africana ab Hottentottis Sibon dicta. *Seb. 1. t. 14. f. 4.*

Abdominal scuta 180, subcaudal scales 85.

SOMEWHAT allied in general appearance to the *Coluber nebulatus*, but rather shorter in proportion : body laterally compressed : head short, flattish, and considerably larger than the neck, pale, and speckled with brown : remainder of the upper parts ferruginous clouded with white : abdomen pale clouded with brown : tail of moderate length, gradually tapering to the tip : the specimen figured in Seba, and referred to by Linnæus, is described as of brighter colours, the ground-colour being yellowish, and the variegations rufous and brown. I cannot forbear expressing some suspicion that this snake and the *nebulatus* may in reality be the same species : at all events, if they are not, they afford a very striking proof of the inefficacy of the Linnæan specific characters attempted from the number of scuta and squamæ.

DINGY SNAKE.

Coluber Exoletus. *C. griseo-cærulescens, capite oblongo depressiusculo, labiis gulaque albis.*

Brueish-grey Snake, with oblong flattish head, and white lips and throat.

Coluber exoletus. *Lin. Syst. Nat. p. 385.*

Abdominal scuta 147, subcaudal scales 132.

DESCRIBED by Linnæus in the Museum Adolphi Friderici: length about three feet: habit of the *Ahætulla*: colour blueish grey: scales on the body obtuse, and arranged in eleven rows: head oblong, flattish: lips and throat white: tail more than a third of the whole length, slender, and pale beneath: native of South America.

DHARA SNAKE.

Coluber Dhara. *C. cupreo-griseus subtus albus, squamarum marginibus albicantibus.*

Cupreous-grey Snake, white beneath, with the edges of the scales whitish.

Coluber Dhara. *Lin. Syst. Nat. Gmel. p. 1111.*

Abdominal scuta 235, subcaudal scales 48.

DESCRIBED by Forskal: native of Arabia: length more than a cubit: thickness less than that of a finger: colour above cupreous grey, with the edges of the scales whitish: beneath white: head ovate and obtuse; covered with large scales, of which that in the middle or between the eyes is larger than the rest.

TYRIAN SNAKE.

Coluber Tyria. *C. albidus, maculis rhombeis fuscis in triplici.*

Whitish Snake, with a triple series of dusky rhomboid spots.

Coluber Tyria. *Lin. Lyst. Nat. Gmel. p. 1111.*

Abdominal scuta 210, subcaudal scales 83.

DESCRIBED by Hasselquist: colour whitish, with a triple longitudinal series of dusky rhomboid spots: native of Egypt.

PELIA SNAKE.

Coluber Pelias. *C. subfuscus fasciis transversis duplicatis nigris, subtus viridis, linea laterali flava.*

Brownish Snake, with double transverse black bands, beneath green, with a yellow lateral line.

Coluber Pelias. *Lin. Syst. Nat. Gmel. 1111.*

Abdominal scuta 187, subcaudal scales 130.

SUFFICIENTLY described in its specific character: observed by Linnæus in the Museum of De-geér: native of South America, and said to occur also in India. In the distribution of its colours it seems allied to the *Coluber ornatus*.

EGG SNAKE.

Coluber Ovivorus. *Lin. Syst. Nat. p. 385.*

Abdominal scuta 203, subcaudal scales 73.

OF this Linnæan snake nothing more seems to be known than that it is a native of America: it

may perhaps be considered as a doubtful species: in the number of its abdominal and subcaudal scales it agrees pretty nearly with the *C. Constrictor*, which is also reported to be a destroyer of eggs.

SWIFT SNAKE.

Coluber Cursor. *C. virescens, striis duabus dorsalibus lineato-maculatis albis, lateribus abdomineque albidis.*

Greenish Snake, with two dorsal stripes of linear white spots, and whitish sides and abdomen.

La Couresse. *Cepede Ovip.* 2. p. 281. *pl.* 14. *f.* 2.

Abdominal scuta 185, subcaudal scales 105.

DESCRIBED by Cepede from a specimen in the Royal Cabinet at Paris: length near three feet: colour greenish above, with two longitudinal rows of small, longish, white spots: sides and abdomen whitish: head covered with large scales: tail of moderate length, and gradually tapering to the tip: said to be a remarkably timid and swift species, generally escaping with great rapidity when discovered: native of the island of Martinico.

HICKANELLA SNAKE.

Coluber Hickanella. *C. albus, cæruleo guttatus, abdomine cæruleo maculato.*

White Snake, speckled with blue above, and variegated with blue on the abdomen.

Serpens *Hikkanella Americanus*. *Seb. 2. t. 75. f. 2.*

A BEAUTIFUL species: length about two feet and a half: thickness moderate: head oblong, large-scaled, white, with the sutures or divisions of the scales blue: remainder of the upper parts white, with numerous small blue spots, disposed in a rhomboid pattern: abdomen white, transversely tessellated in some parts with blue: tail rather short, gradually tapering to the tip: native, according to Seba, of South America, frequenting houses, and being very useful in destroying rats, &c.

BOAFORM SNAKE.

Coluber Boæformis. *C. albidus, fusco variegatus, abdomine albo, scutis brevissimis.*

Whitish Snake, with brown variegations, white beneath, with very short scuta.

Pedda Poda. *Russ. Ind. Serp. p. 27, 28, 30. pl. 22, 23, 24.*

Bora. *Russ. Ind. Serp. p. 44. pl. 39.*

Abdominal scuta 252, subcaudal scales 62.

LENGTH of the specimen described by Dr. Russel about two feet and a half, but supposed to grow much larger: habit thick and short, with

moderately large oblong-ovate head, covered with large scales, and short, sharp-pointed tail: colour of the upper parts very pale or whitish brown, variegated on the back and sides by large and small, irregularly formed, deep-brown patches and spots, those on the sides being mostly ocellated: body covered with very small scales, the three rows next the abdomen being much larger than the rest: abdomen white, the scuta being remarkably narrow or short, and furnished with reddish margins: the under part of the tail is variegated with black and white: native of India: an animal of great strength, wreathing round the arm, if held for a short time, in such a manner as to numb the hand; not poisonous; its bite producing no other effect than that of temporary pain.

VAR. ?

Bora. *Russ. Ind. Serp. pl.* 39.

THIS seems to be no other than the same species of a much larger size: disposition of scales and colours the same, but the ground-colour white, and the tail furnished beneath with several scuta or undivided lamellæ towards the tip, or after those immediately succeeding the vent; while the tip itself is again terminated by a few divided scales: but the number of the whole, taken together, amounts to the same, within a trifle, as in the first-mentioned kind. Found at Calcutta, where it is pretended that its bite is very soon fol-

lowed by eruptions on different parts of the body, though it does not prove fatal in less than ten or twelve days: but this is, in all probability, a mere popular error.

VAR. ?

Pedda Poda. *Russ. t.* 23, 24.

WITH the general habit, colour, &c. of the first-described species, but with larger scales in proportion: perhaps a sexual difference: vent, as in both the preceding, large, semilunar, and edged with a double row of small scales: on each side the vent is also a short, curved, spur-shaped, or horn-like process. This snake is said to grow to a very large size, having been seen of the length of nine or ten feet.

MUCOUS SNAKE.

Coluber Mucosus. C. cærulescens, capite angulato, labiis transversim nigro striatis.

Blueish Snake pale beneath, with angular head, and lips striped transversely with black.

Coluber mucosus. Lin. Syst. Nat. p. 388. *Mus. Ad. Frid. p.* 37. *t.* 23. *f.* 1.

Abdominal scuta 200, subcaudal scales 140.

THIS snake is described by Linnæus in the Museum Adolphi Friderici: it is not remarkable for any thing particular in its appearance, but seems to be rather a small species, measuring about a

foot and half in length, of which the tail measures a third part: the colour is blueish, paler beneath; the head angular, the eyes large, and the lips marked with black bars: it is a native of South America: it seems to be a species rather indistinctly described, and to demand farther examination.

CÆRULESCENT SNAKE.

Coluber Cærulescens. *C. cærulescens capite acuminato, abdomine plano.*

Cærulescent Snake, with pointed head and flat abdomen.

Coluber cærulescens. *Lin. Syst. Nat. p. 389. Mus. Ad. Frid. p. 37. t. 20. f. 2.*

Abdominal scuta 215, subcaudal scales 170.

WITH the general habit of *Ahætulla*: length a foot and half: colour blueish, paler beneath: abdomen flat: head ovate, and acuminate: tail round and about a fourth of the whole length, gradually tapering to the tip: native of South America. This also seems to be an obscure species.

SMOOTH SNAKE.

Coluber Austriacus. *C. griseo-cærulescens lævissimus, serie dorsali duplici macularum rufarum, lateribus abdomineque rufescentibus.*

Blueish-grey polished Snake, with a double dorsal row of rufous spots, and rufescent sides and abdomen.

Coronella Austriaca. *Laurenti Amph. p. 84. t. 5. f. 1.*

La Lisse. Cepede Serp. p. 158.

Abdominal scuta 178, subcaudal scales 46.

THIS snake, which in its general appearance and manners bears a considerable resemblance to the *Natrix*, seems to have been first described as a distinct species by Laurenti, who, in his work on the Amphibia, has distinguished it by the title of *Coronella Austriaca*, being common in the region round Vienna. It is also found in France and several other parts of Europe. Its principal mark of distinction from the *Natrix* is the perfect smoothness of its scales; those of the *Natrix* being somewhat carinated: its colour on the upper parts is blueish grey, inclining to rufous on the sides and abdomen: along the back runs a double row of alternate rufous spots: a few others, somewhat less distinct, appear along each side, and the abdomen is variegated with patches of a similar cast: the eyes are red, and through them, from the nostrils to the back of the cheeks, passes a narrow rufous stripe: two moderately large spots also appear at the back of the head, immediately beyond the large scales: in a young state the abdomen is often of a much brighter cast, or red:

while the colour of the upper parts is more obscure. This animal inhabits moist meadows, hedges, watry places, &c. It is of a fierce disposition in its wild state, biting with much eagerness such animals as happen to attack it, but is incapable of producing any injury, being unprovided with poisonous fangs, and is easily tamed, in which state it shows a considerable degree of attachment. It occasionally varies somewhat in colour, the upper parts having a strong tinge of rufous, and the abdomen of dusky brown or even blackish, while the sides have a cast of yellow or green.

CATENATED SNAKE.

Coluber Catenatus. C. albidus, supra maculis quadratis fuscis tessellatis, abdomine fasciis latis subfuscis distantibus.

Whitish Snake, tessellated above with square brown spots, and marked on the abdomen by very distant, broad dusky bands. Abdominal scuta 147, subcaudal scales 78.

LENGTH about two feet: colour pale or whitish: marked above by numerous square brown spots alternately disposed, and joining at the angles: abdomen pale or white, with six or seven very distant, broad, dusky, transverse bands, one of which is placed immediately beneath the throat: head small, white on the sides, and brown on the top, but marked by a white bar across the nose, joining with two large white marks over the eyes, and thus constituting a kind of reversed horseshoe-shaped white spot on the head: from behind each

eye proceed two dusky lines towards the back of the jaw: tail long, slender, and tapering to a point: described from a specimen in the British Museum.

CINEREOUS SNAKE.

Coluber Cinereus. *C. cinereus*, *abdomine albedo, cauda supra fusco reticulata, subtus transversim lineata.*

Cinereous Snake, with white abdomen, tail reticulated above with brown, and lineated transversly beneath.

Coluber cinereus. *Lin. Syst. Nat. p. 388. Mus. Ad. Frid. p. 37.*

Abdominal scuta 200, subcaudal scales 137.

HABIT of Natrix: length about two feet: colour cinereous: head ovate, convex: eyes large: lips marked by transverse black stripes: trunk covered by nineteen rows of small smooth scales: abdomen white, and slightly angular: tail more than a third of the whole; flattish beneath, with the scales edged with brown above, and appearing reticulated, and transversly lineated beneath: native of the East Indies.

HORSESHOE SNAKE.

Coluber Hippocrepis. *C. lividus fusco maculatus, occipite fascia lunulata reversa.*

Livid Snake, spotted with brown, with a reversed lunulated band on the hind part of the head.

Coluber Hippocrepis. *Lin. Syst. Nat. p. 388.*

Abdominal scuta 232, subcaudal scales 94.

A SMALL species : length little more than a foot : colour livid, with a row of pretty closely placed round brown spots down the back, and two or three rows of much smaller alternating ones down the sides : head of moderate size, marked by a transverse arcuated brown band between the eyes, and by a larger horseshoe-shaped band on the hind-head, the divisions pointing backwards : abdomen pale : tail of middling length, tapering gradually to the tip : native of America.

 SCUTATED SNAKE.

Coluber Scutatus. *C. ater scutis latissimis.*

Black Snake, with extremely broad scuta.

Coluber scutatus. *Lin. Syst. Nat. Gmel. p. 1102, Pall. it. 1, p. 459.*

Abdominal scuta 190, subcaudal scales 50.

HABIT of Natrix : length near four feet : colour entirely black, except that the abdomen is marked alternately on each side with a row of smallish, square, yellowish white spots : scuta re-

markably wide, extending on each side in such a manner as to embrace near two thirds of the body: tail somewhat pyramidal, very long, and flattish beneath: this species was observed by Dr. Pallas about the borders of the river Yaik, occasionally frequenting both land and water.

MINERVA'S SNAKE.

Coluber Minervæ. *C. glaucus, fascia dorsali fusca, capite fasciatus.*

Glaucous Snake, with a brown band down the back, and three on the head.

Coluber Minervæ. *Linn. Syst. Nat. p. 388. Mus. Ad. Frid. p. 36.*

Abdominal scuta 238, subcaudal scales 90.

DESCRIBED by Linnæus in the Museum Adolphi Friderici: length about a foot and half: thickness greater than that of a swan quill: colour glaucous, with a broad, longitudinal, brown band down the back, and three longitudinal bands on the head, two which pass through the eyes: head oblong, ovate, convex, and smooth: eyes large: tail slender, and measuring about a third of the whole length: on each side the body, towards the tail, is a narrow dusky line: the scales on the whole animal are smooth: native of the East Indies. The Snake, being considered as the emblem of Wisdom, was consecrated to Minerva by the ancient Greeks, but the particular species it would be in vain to conjecture.

CASPIAN SNAKE.

Coluber Caspius. *C. supra alternatim fusco flavoque fasciatus, subtus flavus.*

Yellow Snake, marked above by alternate brown bands.

Coluber Caspius. *Lin. Syst. Nat. Gmel. p. 1112. Lepechin, it p. 317. t. 1.*

Abdominal scuta 198, subcaudal scales 100.

THIS snake is said to be found toward the shores of the Caspian sea, in low grounds, and bushy places: when disturbed, it first endeavours to escape, but if pursued or irritated, springs forwards on its assailant with great fury, though incapable of doing any injury by its bite: its colours are sufficiently described in the specific character: it is said to grow to the length of five feet or more.

 DOMESTIC SNAKE.

Coluber Domesticus. *C. griseus, fusco maculatus, macula gemina nigra inter oculos.*

Grey Snake, spotted with brown, with a double black spot between the eyes.

Coluber Domesticus. *Lin. Syst. Nat. p. 389.*

Abdominal scuta 245, subcaudal scales 94.

THIS species is a native of Barbary, where it is said to be in a manner domestic, being very common in the houses of the inhabitants, and considered as a perfectly harmless, and even useful in-

mates, destroying the smaller kind of noxious animals: in its general appearance it is allied to the *Hippocrepis*, being of a pale grey colour, spotted with brown; its principal mark of distinction being a double black spot between the eyes.

HALF-SPOTTED SNAKE.

Coluber Reginae. *C. fusco-violaceus, subtus albus, scutis alternatim macula laterali semiorbiculata fusca notatis.*

Violaceous-brown Snake, white beneath, with the scuta marked alternately by a semiorbicular brown spot.

Coluber Reginae. *Lin. Syst. Nat. p. 378. Mus. Ad. Frid. p. 24. t. 13. f. 3.*

Abdominal scuta 137, subcaudal scales 70.

A SMALL species, about a foot in length: colour purplish brown above, and white beneath, the abdominal scuta marked alternately on one side by a pretty large dusky half-round spot: the tail is of moderate length, rather slender, and the scales beneath are plain or unspotted: native of India.

*CARACARA SNAKE.

Coluber Caracara. *C. cæruleus, squamis corporis antici elongatis, postici rhombeis, collo transversim nigro striato.*

Blue Snake, with the scales on the fore part of the body elongated, of the hind part rhomboid, and the neck transversely striated with black.

Coluber Caracara. *Lin. Syst. Nat. Gmel. p. 1117.*

Serpens Caracara Brasiliensis singularis. *Seb. 2. t. 78. f. 3.*

Abdominal scuta 190, subcaudal scales 125.

AN elegant species, described and figured in the work of Seba: length about two feet and a half: habit moderately slender: head rather large and oblong; snout obtuse: from behind each eye a black streak: colour pale blue, the hinder part of the body being tinged with rose-colour: the scales on the fore parts of the animal are of a narrow, lengthened form, and on the hind parts rhomboid, or of the usual shape: neck and fore parts elegantly marked by numerous transverse black lines, the scales on that part being tipped at each end with black: tail rather long, and gradually tapering to the tip: native of Brasil.

VAR. ?

IN this specimen, which is in the British Museum, the head is elegantly marbled with black variegations, and the whole upper parts are varied with black, though not in the same distinctly linear manner as on the fore part: the abdomen is perfectly plain or unspotted, and is marked by two

narrow, pale, distant lines running down the whole length, between which lines it is of a slightly flattened shape. The number of abdominal scuta in this specimen is 185, and of subcaudal scales 90.

QUILL SNAKE.

Coluber Calamarius. *C. lividus, fasciis transversis punctisque linearibus fuscis, subtus albido fuscoque tessellatus.*

Livid Snake, with transverse brown bands and linear points, and tessellated beneath with brown and white.

Coluber Calamarius. *Lin. Syst. Nat. p. 275. Mus. Ad. Frid. p. 23. t. 6. f. 3.*

Abdominal scuta 140, subcaudal scales 22.

A SMALL snake, described by Linnæus in the Museum Adolphi Friderici: length about a span: thickness that of a goose quill: colour above livid, with the whole surface scattered over with linear dusky points, and marked also by several narrow transverse dusky bars: abdomen pale, tessellated in an alternate manner with dusky squares: head very small, convex, and ovate: tail short, and terminating rather obtusely: native of America.

SCHÖKAR SNAKE.

Coluber Shockar. *C. fusco-cinereus, vitta utrinque duplici longitudinali alba, abdomine albido, gula fusco punctata.*

Cinereous-brown Snake, with a double longitudinal white band on each side, whitish abdomen, and throat speckled with brown.

Coluber Schockar. *Lin. Syst. Nat. Gmel. p. 1115. Forsk. F. Arab. p. 14.*

Abdominal scuta 180, subcaudal scales 114.

DESCRIBED by Forskal : length about a cubit and half : thickness that of a finger : colour on the upper parts cinereous brown, with a double longitudinal white stripe on each side, and in the more advanced or older specimens, a narrow middle or dorsal stripe, consisting of small whitish spots : throat yellowish, spotted with brown : head ovate, obtuse, and covered with large scales : tail about a third of the whole length : native of the woody parts of Arabia.

 BEATAEN SNAKE.

Coluber Beataen. *Forsk. F. Arab. p. 15.*

A POISONOUS species, mentioned by Forskal, who, however, only tells us that it is black and white, and that its bite is immediately fatal, the body swelling in consequence.

HOELLEICK SNAKE.

Coluber Hoelleik. *Forsk. F. Arab. p. 15.*

ENTIRELY of a red colour: length about a foot: its bite causes an inflamed tumour; and its breath is said to excite an itching on the skin: native of Arabia.

 JARA SNAKE.

Coluber Jara. *C. niger, punctis linearibus geminatis albis, collari abdomineque flavescens.*

Black Snake, with double linear white specks, and yellowish collar and abdomen.

Jara Potoo. *Russ. Ind. Serp. p. 19. pl. 44.*

Abdominal scuta 175, subcaudal scales 56.

LENGTH about fifteen inches: colour black above, each scale marked by two minute white lines: round the back of the head a yellowish collar: abdomen of the same colour: tail very short, tapering suddenly to a point: native of India.

ARNEE SNAKE.

Coluber Arnensis. *C. fusco-flavescens, fasciis angustis transversis nigricantibus albo marginatis, abdomine albido.*

Yellowish-brown Snake, with narrow, blackish, transverse bands edged with white, and pale abdomen.

Russ. Ind. Serp. p. 43. t. 38.

Abdominal scuta 169, subcaudal scales 50.

LENGTH about a foot and half: colour above yellowish brown, with moderately distant, blackish or very deep brown transverse bands edged with white: abdomen pale: head small: tail rather short, and tapering to a sharp-pointed tip: native of the country of Arnee in the East Indies.

SAGITTATED SNAKE.

Coluber Sagittatus. *C. fuscus, maculis dorsalibus sagittatis albidis nigro marginatis.*

Brown Snake, with whitish sagittated dorsal spots edged with black.

Tar Tutta. *Russ. Ind. Serp. p. 20. pl. 15.*

Abdominal scuta 229, subcaudal scales 87.

LENGTH about two feet: habit slender: head rather large, round, obtuse, and covered with large scales: neck slender: colour of the upper parts yellowish brown, variegated on the back with a kind of continued chain of sagittated or triangular spots, the sides extending pretty much, and the tips pointing forwards: these spots are edged with black, and become fainter towards the tail, which

is slender, and gradually tapers to a point : abdomen yellowish white, the scuta marked by a dusky spot on each side : native of India.

STREAKED SNAKE.

Coluber Striatus. *C. nigro-virescens, albo fasciato-maculatus, subtus albido-cærulescens.*

Greenish-black Snake, with spotted white bands, and blueish white abdomen.

Gajoo Tutta. *Russ. Ind. Serp. p. 22. pl. 16.*

Abdominal scuta 174, subcaudal scales 40.

LENGTH about fourteen inches : colour above greenish black, marked by about twenty transverse fasciæ, each composed of a number of longitudinal, abrupt, white or yellowish white streaks, and along the sides of the body are interrupted rows of similar streaks : head plain, obtuse, and large-scaled : abdomen blueish white : tail very small, and tapering to a point : native of India.

FASCIOLATED SNAKE.

Coluber Fasciolatus. *C. cinereus, fasciis transversis albidis, abdomine glauco.*

Cinereous Snake, with whitish transverse bands and glaucous abdomen.

Nooni Paragoodoo. *Russ. Ind. Serp. p. 26. pl. 21.*

Abdominal scuta 192, subcaudal scales 62.

LENGTH about two feet: habit rather slender: colour grey-brown, marked with equidistant narrowish, transverse white bands spotted on the edges with black: head ovate, of moderate size, and large-scaled: tail slender, and tapering to a point: abdomen dusky pearl-coloured: native of India, where its bite is popularly believed to be mortal; but Dr. Russel's experiments on chickens prove this notion to be entirely erroneous, the animal being unprovided with fangs.

 BIPED SNAKE.

Coluber Bipes. *Lin. Syst. Nat. Gmel. p. 1099. Scop. Ann. Hist. Nat. 2. p. 39.*

A SOMEWHAT doubtful species, mentioned by Scopoli as an inhabitant of the Tyrolese waters, and said to be furnished with two short processes or feet, and to have red eyes, elliptic dorsal scales, and the lateral ones spotted with white: scuta whitish, with a dusky spot in the middle: perhaps no other than a variety of the *Natrix*.

LINEATED SNAKE.

Coluber Lineatus. *C. cæruleo-virescens, lineis tribus vel quinque fuscis, intermedia latiore.*

Blueish-green Snake, with three or five brown linear stripes, of which the middle one is broadest.

Coluber lineatus. *Lin. Syst. Nat. p. 382. Mus. Ad. Frid. p. 30. t. 12. f. 1. and t. 20. f. 1.*

Serpens Ceilonica lineis subfuscis. *Seb. 2. t. 12. f. 3.*

Abdominal scuta 169, subcaudal scales 84.

THIS is a highly elegant species, but differs considerably in appearance, according to the different periods of its growth: its general colour is a pale and somewhat gilded blueish green above, marked throughout the whole length by five longitudinal narrow bands or stripes, of which the middle one is considerably broader than the others, and of a deep dusky green, with black edges and specks: on each side, at some distance, is a rather narrower stripe of similar colour, and beneath this on each side is a black line. In the small or younger specimens there are rarely more than three stripes; the appearance of the lower or narrow linear side-stripe being scarce apparent: the habit of the animal is long and slender or flagelliform, with a small head, a long, thin tail, and a flattish abdomen: the stripes on the head are continued to the tip of the snout, which is obtuse. It is a native of several parts of India, and is commonly about two or three feet in length. It is a perfectly innoxious species.

DART SNAKE.

Coluber Jaculatrix. *C. albidus lineis tribus nigricantibus, intermedia latiore.*

Whitish Snake, with three blackish stripes, the middle one broadest.

Coluber Jaculatrix. *Lin. Syst. Nat. p. 381.*

Serpens Americana *Xequipiles dicta. Seb. 2. t. 1. f. 9.*

Abdominal scuta 163, subcaudal scales 77.

MUCH allied to the *lineatus* in general appearance, but is a smaller species: colour whitish, with a tinge of blue; and marked by three longitudinal black or deep-brown stripes, of which the middle one is by much the broadest: abdomen pale or whitish: it appears to vary in colour, a specimen described by Seba being of a yellowish cast, with the stripes ferruginous: in the number of scuta and squamæ it very nearly resembles the *lineatus*: it is a native of Surinam, and is considered as a harmless animal.

 SIBILANT SNAKE.

Coluber Sibilans. *C. caeruleus, lineis quinque nigricantibus, capite maculato.*

Blueish Snake, with five dusky lines, and spotted head.

Coluber Sibilans. *Lin. Syst. Nat. p. 383.*

Seb. Mus. 1. t. 109. f. 1. and 2. t. 56. f. 4. t. 107. f. 4.

Abdominal scuta 166, subcaudal scales 100.

MUCH allied in general appearance to the *lineatus*, being of a long slender habit, and marked

with five dark lines or longitudinal stripes on a blueish ground-colour: the chief or middle dorsal stripe is the broadest, and is nearly black, with a whitish speck on each of its component scales: at some distance from this are a pair of rather narrower stripes of similar appearance, and below these another pair of still narrower or more linear ones: the space between the second or lowermost pair is of a paler colour than the rest of the skin, or whitish: the abdomen is also of similar colour: the head is ovate, covered with large scales, and marked with several oblong, blue, and slightly angular spots with black edges: the middle or central spot is of a form somewhat resembling that of a horse-shoe, with the divisions pointing forwards: the interstices between the spots are of a pale or whitish colour: the tail is very long and slender. This species is of considerable size, sometimes measuring four feet in length: it occasionally exhibits a kind of gilded tinge on the skin, and the stripes are sometimes of a chesnut or reddish cast. It is an Asiatic species, and of an innoxious character.

SITULA SNAKE.

Coluber Situla. *C. griseus vitta longitudinali utrinque linea nigra marginata.*

Grey Snake, with a longitudinal dusky band bounded on each side by a black line.

Coluber Situla. *Lin. Syst. Nat. p. 385.*

Abdominal scuta 236, subcaudal scales 45.

Of this species little more is known than what may be collected from its specific character: it is a native of Egypt, and appears to have been first described by Hasselquist.

 SAURITE SNAKE.

Coluber Saurita. *C. fuscus, vittis tribus cæruleo-virentibus.*

Brown Snake, with three blue-green stripes.

Coluber Saurita. *Lin. Syst. Nat. p. 385.*

Ribbon Snake. *Catesb. Carol. 2. t. 50.*

Abdominal scuta 156, subcaudal scales 121.

A SPECIES of considerable beauty: colour brown above, with three moderately broad longitudinal blueish-green or whitish stripes: abdomen pale blueish green: the brown colour has sometimes a ferruginous cast, and the blue-green exhibits a degree of iridescent variation: the head is rather small and slightly pointed; the whole habit long and slender, and the tail thin: it is said to be an animal extremely swift in its motions, frequenting trees, and inhabiting Carolina, and many other parts of North America: it is perfectly innocent, and is about three feet in length.

VITTATED SNAKE.

Coluber Vittatus. C. albido-cærulescens, vittis tribus nigricantibus intermedia angustissima, abdomine albo, scutis fusco marginatis.

Blueish-white Snake, with three blackish stripes, the middle one extremely narrow, and white abdomen with the scuta bordered with brown.

Serpens Rotang, &c. Seb. 1. t. 35. f. 4.

Coluber de Terragona. Seb. 2. t. 60. f. 2, 3.

Coluber vittatus. Lin. Syst. Nat. p. 380.

Abdominal scuta 142, subcaudal scales 78.

A MIDDLE-SIZED species, of a moderately slender habit, growing to the length of about two feet and a half: colour pale blue or whitish; marked down the whole length of the back by three black or deep-brown stripes, the middle one being much narrower than the others: between the middle and the side-stripes are also interposed a pair of extremely narrow or linear stripes, which are gradually lost or obliterated after passing some distance down the back: the head is rather small than large, of a longish form, but not sharp-snouted, covered with large scales, and marked above by black variegations, two narrow bands passing over the snout, a much broader one passing horizontally between the eyes, and being dilated behind into a large lobated patch on the top of the head, with two very small, oval, white spots in the middle: the hinder divisions of this patch are continued to some little distance on each side the neck into two or three ovate black spots, from the last of which commence the very narrow or linear

stripes before mentioned: the under parts of the animal are white, each scutum being very deeply margined with black or dark brown, thus forming so many transverse bands on the abdomen and tail, and affording a very characteristic mark of the species: the tail is of moderate length, slender, and gradually tapers to a fine point. This snake is a native of South America, and is considered as an innocuous species: it appears to vary sometimes in colour, Seba describing specimens in which the stripes were red instead of brown or black.

BLACK-BACKED SNAKE.

Coluber Melanotus. C. albidus vittis tribus approximatis nigris, intermedia latissima.

Whitish Snake, with three approximated black bands, the middle one very wide.

Serpens Africana Bonæ Spei eleganter lemniscata. Seb. 2. t. 62. f. 3.

Abdominal scuta 158, subcaudal scales 50.

A MIDDLE-SIZED, or rather smallish species: length about a foot and half or two feet: habit moderately slender: colour whitish, with three black or dark brown dorsal stripes, of which the middle one is very broad, and the others rather narrow: all pretty closely placed: head of moderate size, covered with large scales, and of a pale colour; neck sometimes marked on each side by a row of five or six roundish black spots, succeeded by the side stripes: abdomen white.

SIRTAL SNAKE.

Coluber Sirtalis. *C. fuscus, vittis tribus viridi-cærulescentibus.*

Brown Snake, with three blueish-green bands.

Coluber Sirtalis. *Lin. Syst. Nat. p. 383.*

Abdominal scuta 150, subcaudal scales 114.

OBSERVED by Kalm in Canada: a slender species, of a brown colour above, with three longitudinal blue green stripes: body said by Linnæus to be slightly striated.

 TRISCAL SNAKE.

Coluber Triscalis. *C. glaucus, lineis tribus fuscis ad nucham conjunctis.*

Glaucous Snake, with three brown lines conjoined at the back of the neck.

Coluber Triscalis. *Lin. Syst. Nat. p. 385.*

Abdominal scuta 195, subcaudal scales 86.

A SMALL but beautiful species, measuring about a foot and half in length, and being of a sea-green colour, marked above by four rufous stripes which gradually unite into three, and afterwards into two, and at length, on the tail, form one single stripe: the head is covered with large scales, those on the other parts being smooth or not carinated: the tail measures about a fifth of the whole length: native of South America.

ELEGANT SNAKE.

Coluber Elegans. *C. griseo-flavescens, fasciis tribus latis reticulatis nigricantibus, fascia abdominali latissima, capite fusco irrorato.*

Yellowish-grey Snake, with three broad reticulated blackish bands, a very broad abdominal band, and head freckled with brown.

Serpens catenata ex Nova Hispania. *Seb. 2. t. 60. f. 1.*

Abdominal scuta 202, subcaudal scales 146.

HABIT long and slender: length about two feet: head long, obtuse, large scaled, and of a grey colour, freckled with innumerable dusky points: on the back a broad, rich chain or stripe formed by four or five reticulated black lines on a blueish or glaucous ground: on each side the body a similar stripe, but narrower, and consisting only of two black lines: the colour of the body between the stripes is yellowish grey; and between the stripes and abdomen yellowish white: the abdomen itself is marked by a very broad reticulated and punctated stripe of a greyish colour with dusky variegations: the tail is very long and narrow. This snake is well figured in Seba, who represents it as a native of South America. In the British Museum are specimens preserved in spirits: in the living animal the colours are probably much more brilliant than in the above description.

TÆNIATED SNAKE.

Coluber Tæniatus. C. glaucus, fasciis duabus nigris latissimis, lateribus nigro maculatis, scutis utrinque macula semiorbiculata nigra.

Glaucous Snake, with two very broad black bands, the sides spotted with black, and the scuta marked on each side by a semiorbicular black spot.

Abdominal scuta 148, subcaudal scales 67.

SIZE and proportion of *Berus*: general colour glaucous; abdomen paler: along the back, from head to tail, an extremely broad and conspicuous pair of black fillets, leaving a whitish space in the middle: sides of the body below the fillets blue and spotted, as in the *ringed snake*, with black marks, scuta marked on each side at a small distance from their commencement, by a smallish semi-orbicular black spot: head obtuse, covered with large scales, and marked by a dilated blackish spot and a sharp-pointed white line pointing towards the snout: tail slender, and gradually tapering to a point. Described from a specimen in the British Museum.

DECOROUS SNAKE.

Coluber Decorus. C. cæruleo-virescens, fascia utrinque duplici nigra, collo utrinque nigro maculato.

Blueish-green Snake, with a double lateral black band, and the neck spotted on each side with black.

Abdominal scuta 170, subcaudal squamæ 132.

HABIT slender and flagelliform: length about two feet and a half: colour pale, blueish, gilded green, with iridescent variegations: beneath paler or more inclining to white: on each side the body, near the abdomen, a double black stripe: head longish, large scaled, unspotted, and marked on each side, through the eyes, by a broadish black stripe broken into spots, and which, passing to some little distance along the neck, becomes divided, and forms the double lateral stripe before mentioned: eyes large: tail very long, slender, and gradually tapering to a fine point. Described from a specimen in the British Museum.

BILINEATED SNAKE.

Coluber Bilineatus. C. rufus, fasciis duabus luteis.

Rufous Snake, with two gold-yellow stripes.

La Double-Raie. *Cepede Serp. p. 220. pl. 10. f. 2.*

Abdominal scuta 205, subcaudal scales 99.

THIS is described by the Count de Cepede, who informs us that it is a beautiful species, measuring about two feet one inch in total length,

the tail measuring six inches and six lines: the colour of the upper parts is rufous, each scale bordered with yellow, and down the back, from the back of the head to the end of the tail, run two bright gold-yellow stripes: the head is furnished with large scales, and those on the body are smooth or uncarinated: its native country is unknown.

BUGLE SNAKE.

Coluber Gemmatus. C. cæruleus, fascia media nigra albo-maculata, lateralibus albis.

Blue Snake, with a black middle-stripe spotted with white, and two lateral white stripes.

Le Chapelet. *Cepede Serp. p. 246. pl. 12. f. 1.*

Abdominal scuta 166, subcaudal scales 103.

A BEAUTIFUL species: length about fifteen or sixteen inches: colour of the upper parts blue, with three narrow equidistant stripes from head to tail, the two lateral stripes being white, the middle one black, marked by a row of small white specks alternately oblong and round, representing a small string of beads and bugles: head large-scaled and marked on each side by three or four spots forming a band across the eyes, the top spotted with pale blue marks bordered with black: the abdomen is white, each scutum being marked at its edge, near the body, with a small black speck, forming two rows down the abdomen: native country unknown: described by Cepede from a specimen in the Royal Cabinet.

EIGHT-LINED SNAKE.

Coluber Octolineatus. *C. subferrugineus, lineis octo nigris.*

Subferruginous Snake, with eight black lines.

Abdominal scuta 185? subcaudal scales 65?

A SMALL Snake, about the size of a middling earthworm: colour pale ferruginous, marked by eight distinct black lines or stripes from head to tail; the two principal ones running down the top of the back, and the rest, which are narrower, down the sides: head scarce larger than the neck, large-scaled, blunt-nosed, and marked over the snout by a transverse black band passing through the eyes: the two principal or dorsal stripes unite in a sharp point on the top of the head: abdomen white: tail short, measuring about an inch and half, and tapering pretty suddenly. Described from specimens in the British Museum, having the appearance of very young animals: native country unknown.

 INSTESTINAL SNAKE.

Coluber Intestinalis. *C. subferrugineus, supra lineis tribus albis, dorsali super caput bifurca, abdomine albo nigroque vario.*

Subferruginous Snake, marked above by three white lines, the dorsal one forked on the head, the abdomen variegated with black and white.

Serpentula gracilis longa Guineensis. *Seb. 2. t. 2. f. 7.*

A SMALL, slender species, described and figured by Seba, measuring about a foot and half in

length: colour above pale ferruginous marked by three narrow white lines, of which that on the back is continued to the top of the snout, where it divides into two streaks: abdomen whitish variegated with transverse black bars: head rather large, and, so far as appears from Seba's figure, covered with small scales: native of Guinea.

DIONE SNAKE.

Coluber Dione. *C. cærulescens, fusco maculatus, lineis tribus albidis.*

Pale blue Snake, spotted with brown, with three whitish lines.

Coluber Dione. *Lin. Syst. Nat. Gmel. p. 1106. Pall. it. 2. p. 717.*

Abdominal scuta 190, subcaudal scales 66.

HABIT slender: length about two feet: head small, tetragonal, and commonly reticulated with blackish sutures: colour of the whole upper parts pale blue, with three paler or whitish lines, the intermediate spaces being marked with a row of dusky alternate, and sometimes subconfluent spots or patches: abdomen pale, freckled with minute livid spots interspersed with red specks: tail about a sixth part of the whole length. This species is a native of the salt deserts towards the Caspian sea, and of the hilly regions near the river Irtysh, and was first described by Dr. Pallas.

TRIFASCIATED SNAKE.

Coluber Trifasciatus. C. fasciis tribus latis nigris, intermedia linea alba divisa, abdomine lineis tribus punctatis.

Snake with three broad black stripes, the middle one divided by a white line, and three spotted lines down the abdomen.

A SMALL species, measuring about a foot in length, and being rather thick in proportion: colour above black, formed by three broad stripes, of which the middle one itself is parted down the middle by a very narrow white line: abdomen white, marked by three rows of black spots: head rather small than large, blackish, with white or pale sutures: described from a specimen in the Museum of Dr. William Hunter.

STOLATED SNAKE.

Coluber Stolatus. C. glaucus, fasciis duabus albidis, maculis subquadratis transversis fuscis interjectis.

Glaucous Snake, with two whitish stripes, and squarish transverse brown spots between.

Coluber stolatus. Lin. Syst. Nat. p. 379.

Seb. Mus. 2. t. 14. f. 1, 3.

Abdominal scuta 143, subcaudal scales 76.

OF middling size, measuring from a foot and half to two feet or more in length: habit rather slender: colour above blueish grey, with a pair of moderately distant white lines down the back, and a continued series of brown transverse, equidistant

zones : abdomen pale or white, each scutum being marked on each side by two small black specks : head large-scaled, pale or blueish above, and of moderate size : tail rather short, and tapering to a point. Native of India : mistakenly marked in the *Systema Naturæ* as a poisonous species.

TRILINEATED SNAKE.

Coluber Trilineatus. C. rufus, lineis tribus nigris.

Rufous Snake, with three black lines.

La Trois-Raies. *Cepede Serp. p. 254.*

Abdominal scuta 169, subcaudal scales 34.

LENGTH about a foot and half : colour above rufous, marked throughout the whole length by three black lines or narrow stripes : head covered with large scales : tail about two inches and three quarters long : native of Africa : described by the Count de Cepede.

BOCHIR.

Serpens Ægyptiaca Bochir dicta. Seb. 2. t. 38. f. 3.

SIZE and general habit of the Viper, but the head covered in front with moderately large scales : the head is also very short, and variegated with red spots : colour of the whole animal cinereous yellow, marked along the upper part by five deep rufous stripes or lines from head to tail : ab-

domen speckled with black points: tail shortish, and gradually tapering to a sharp tip: native of Egypt, according to Seba.

AURORA SNAKE.

Coluber Aurora. *C. croceus, fascia dorsali abdomineque flavis.*

Orange-coloured Snake, with yellow dorsal band and abdomen.

Coluber Aurora. *Lin. Syst. Nat. p. 379. Mus. Ad. Frid. p. 25. t. 19.*

Serpens Acontias, &c. *Seb. 2. t. 78. f. 3.*

Abdominal scuta 179, subcaudal scales 37.

LENGTH about two feet and a half, and moderately thick in proportion: colour dull orange, with a broad dorsal line of pale yellow: head rather large, and covered with very large scales: those on the body are also of considerable size: abdomen yellow: tail rather short, and tapering to an obtuse point: native of South America.

IBIRACOA.

Serpens Brasiliensis *Iberacoa dicta. Seb. 1. t. 87. f. 1, 2, 3.*

Serpens *Xaxalhua. Seb. Mus. 2. t. 63. f. 2.*

A BEAUTIFUL snake, figured in the work of Seba: length about two feet: colour pale or whitish yellow, tinged with red, blue, &c. and marked above by several parallel longitudinal rows of black linear spots, the middle or broadest range consisting rather of broadish spots, more espe-

cially towards the head, which is of a lengthened form, white on the top, speckled with black, covered with large scales, and marked along each cheek by a broad black band united at the beginning of the neck by a transverse bar, from the back of which proceed a pair of abrupt streaks down the sides of the neck: tail moderately slender, tapering to a fine point: abdomen white: native of South America. In the kind called *Xaxahlhua* by Seba, figured at pl. 63 of vol. 2. the head is yellow with the black cheek stripes, and the body white, with four narrow lines along the upper part, the two middle ones being black, and the two exterior red: perhaps, after all, these snakes may be no other than varieties of some of the Linnæan lineated species, which are known to vary considerably in their colours, and in the disposition of their marks.

 PALE SNAKE.

Coluber Pallidus. *C. griseus, fusco punctatus, lineis utrinque duabus lateralibus interruptis nigris.*

Grey Snake, speckled with brown, with a double, interrupted, black line on each side.

Coluber Pallidus. *Lin. Syst. Nat. p. 381. Mus. Ad. Frid. p. 31. t. 7. f. 2.*

Serpens Americana lemniscata. *Seb. 2. t. 11. f. 3. ??*

Abdominal scuta 156, subcaudal scales 96.

DESCRIBED in the *Amoenitates Academicæ*.
Habit slender: length a foot and half: thickness that of a swan quill: back slightly angulated on

each side: head roundish, much thicker than the neck, covered with large scales: a double black line beyond the eyes, and which, in passing along the sides of the body, is occasionally interrupted: ground-colour pale, variegated with scattered grey spots and points: tail very slender towards the tip, so that the scales are with difficulty counted on that part: native of India: varies considerably in the number of scuta, &c.

LONG-SNOUTED SNAKE.

Coluber Mycterizans. *C. gracilis viridis, naso subtetragono elongato acuminato, linea utrinque abdominali flava.*

Slender green Snake, with subtetragonal lengthened sharp-pointed snout, and a yellow line on each side the abdomen.

Blueish-green Snake. *Catesb. Carol. 2. t. 47.*

Abdominal scuta 192, subcaudal scales 167.

COLOUR grass-green, with a yellow line on each side the abdomen: habit remarkably slender, measuring about three feet and a half in length, and about half an inch in diameter: head moderately large, long, and very sharp-snouted, the upper jaw running far beyond the lower, and being of an obscurely tetragonal form: sometimes this species varies in having an additional pair of yellow abdominal lines, running down the middle of that part: it is an innoxious snake, though erroneously marked as poisonous in the *Systema Naturæ*, owing to the fang-like appearance of its large and long teeth in the upper jaw. It is a native of

many parts of North America, where it is principally seen on trees, moving with great velocity in pursuit of insects, on which it is said principally to feed.

VAR. ?

A SUPPOSED variety of this Snake is described and figured in Dr. Russel's work on Indian Serpents, differing from the above in the colour of the under parts, which, instead of being green, are of a cinereous pink-colour, elegantly freckled with very numerous minute black and yellowish dots, the margins of the scuta being edged with dull yellow: the skin of the neck also, when the animal is irritated, exhibits, by the dilatation of the skin on that part, a beautiful variegation of black and white reticular marks, which disappear when at rest: this variety, if such it be, is of an apparently ferocious nature, hissing violently and snapping at any thing opposed to it, but producing no other effect by its bite than that of temporary pain in consequence of mere puncture: it is known by the name of *Botla Passeriki*. See Russel's Indian Serpents, pl. 13. The number of abdominal scuta is 174, and of subcaudal squamæ 148. Another snake, agreeing with the above, except in having the abdomen pale green, is also figured in Dr. Russel's work, under the name of *Passeriki Pam*: its abdominal scuta are 178, and the subcaudal scales 166. The Coluber Mycteri-

zans, in all its states, appears to vary considerably in the number of these parts.

COLUBER NASUTUS.

Serpens viridis ore acuminato ex Java, Aspidis species. *Seb.* 2.
t. 57. *f.* 4.

COLOUR a beautiful grass-green, with a yellow lateral line at the edges of the abdomen, as in the Mycterizans: general length about three feet: habit moderately slender: head rather large, and covered in front with very large scales, and sharp-pointed, the upper jaw projecting considerably beyond the lower: tail long and slender: well figured in the work of Seba: so nearly allied to the Mycterizans as to be scarce distinguishable by a specific character, but seems to have a somewhat larger head in proportion, and to be somewhat less slender in the body: native, according to Seba, of Java.

PURPURASCENT SNAKE.

Coluber Purpurascens. *C. violaceo-virescens, linea utrinque abdominali pallida.*

Violaceous-green Snake, with a pale line on each side the abdomen.

Serpens canora purpurea Cæcuba. *Seb. 2. t. 82. f. 3.*

Abdominal scuta 212, subcaudal scales 182.

EXTREMELY resembling the *nasutus* and *mycterizans* in general habit, except in the article of the pointed snout, the head in this being of an ovate form, with a moderately tapering, but not pointed upper jaw : its colour is an obscure green, with a very strong cast of violet purple : the skin about the neck and back appearing and forming in some parts a kind of reticular variegation as in the *ahætulla*, *mycterizans*, &c. on each side the abdomen is a white or whitish-yellow stripe, and in some specimens two other stripes of similar colour pass along the middle of that part.

IRIDESCENT SNAKE.

Coluber Ahætulla. *C. viridi-cæruleus nitidissimus, abdomine pallido, fascia oculari nigra.*

Bright blue-green iridescent Snake, with pale abdomen and black streak across the eyes.

Coluber Ahætulla. *Lin. Syst. Nat. p. 387. Mus. Ad. Frid. p. 35. t. 22.*

Serpens ornatissima Amboinensis Boiguatrara dicta. *Seb. 2. t. 82. f. 1.*

Abdominal scuta 163, subcaudal scales 150.

ONE of the most beautiful of the whole serpent tribe, and, in general, easily distinguished by its blue-green gilded tinge, accompanied by iridescent hues: its habit is long and slender, measuring about three feet and a half, or four feet, in length, and about half or three quarters of an inch in diameter: the skin, between the scales, is blackish, and in some parts gives an additional beauty to the general colour: across the cheeks, passing through the eyes, is a jet black streak: the head is covered above with large scales, and the snout is slightly elongated, but by no means pointed: the abdomen is pale and flattish, as in the *mycterizans* and some others of this tribe, and the tail is angular, thin, and of very considerable length. This species is entirely innocent, and is a native of several parts of India.

SUMMER SNAKE.

Coluber Æstivus. *C. viridi-cæruleus gracilis rostro obtuso, abdomine virescente.*

Blue-green slender Snake, with obtuse snout, and pale-green abdomen.

Green Snake. *Catesb. Carol. 2. pl. 57.*

Abdominal scuta 155, subcaudal scales 144.

HABIT long and flagelliform as in the *Abætulla*: general length about three feet: head obtuse; colour of the whole upper parts blue-green, with a slight purplish cast in some specimens: abdomen pale blue-green: tail very long and slender: native of many parts of North America, residing on trees, and preying on flies and other insects. *Catesby* affirms that it is easily reclaimed from its natural wildness, becoming tame and familiar, and adds, that some people will carry it in their bosoms.

 FILIFORM SNAKE.

Coluber Filiformis. *C. angustissimus niger, subtus albus.*

Extremely slender black Snake, white beneath.

Coluber filiformis. *Lin. Syst. Nat. p. 388. Mus. Ad. Frid. p. 36, t. 17, f. 2.*

Abdominal scuta 165, subcaudal scales 158.

DESCRIBED by Linnæus in the Museum Adolphi Friderici: length about a foot; thickness scarcely that of a goose quill: colour black above, appearing like a broad dorsal stripe: beneath

white: head ovate, twice the diameter of the body, black above, and white beneath: tail above a third of the whole length, very slender, and sharp-pointed: native of India. Linnæus observes that it is not quite certain that it may not be a snake in a young or unadvanced state.

BLACK-TAILED SNAKE.

Coluber Melanurus. C. fusco-flavescens, capite maculisque duabus caudalibus nigris.

Yellowish-brown Snake, with black head and two black spots on the tail.

Russ. Ind. Serp. p. 12. pl. 8.

Abdominal scuta 241, subcaudal scales 32.

A SMALL species, of a slender habit: length about ten or eleven inches; thickness scarcely that of a goose quill, and nearly of equal diameter from head to the tip of the tail: colour light yellowish brown, with a dotted black line running from head to tail along the middle of the back; and a few fainter fillets on the sides: the head is small, ovate, black, and covered with large scales: the tail is very short, scarce measuring more than an inch in length, and at its origin is marked, on the upper part, by a large rhomboid black spot, edged with white, and having a white speck in the middle: the tip of the tail is also marked by a similar black spot: the abdomen is of a pale orange-colour, but the under part of the tail is white, speckled and variegated with black. This

little snake is a native of India, and is described and figured in Dr. Russel's work on the Indian Serpents: its bite is said to be painful; but, from the experiment of Dr. Russel on the subject he examined, it appeared not to be poisonous to a chicken whose breast it was provoked to bite, and to which it adhered firmly for nearly a minute: the mouth, however, when closely examined, appears to be furnished with fangs.

COLLARED SNAKE.

Coluber Torquatus. *C. supra niger, subtus ruber, collari albo.*

Small Snake, black above, red beneath, with a white collar round the neck.

Little black and red Snake. *Edw. p. 349.*

Another small Snake? *Edw. Glean. 3. p. 291.*

A SMALL species, less than an earthworm: head and upper parts of a polished jet-black colour: abdomen bright red: round the neck a white collar: head rather large, and covered with large scales: eyes flame-coloured: native of Pennsylvania, where it inhabits the crevices of rocks, old walls, &c. feeding on insects, and seldom appearing abroad.

VAR. ?

CHESNUT-COLOURED above, and deep yellow beneath; the two colours being divided by a blue-and-black speckled line: round the neck a collar of yellow spots: native of Pennsylvania.

HYDRUS. WATER-SNAKE.

Generic Character.

<i>Corpus</i> antcrius gracile, sensim crassescens, squamosum.	<i>Body</i> slender in front gradually thickening, scaled.
<i>Cauda</i> anceps.	<i>Tail</i> compressed.

THE genus *Hydrus* is of late institution, and comprehends those Serpents which naturally inhabit the water, whether fresh or salt, without ever making their appearance on land, except when driven there by accident. In their general appearance they are most allied to the *Angues*, and are particularly distinguished by having laterally compressed or flattened tails. This genus was first instituted by Mr. Schneider, who has, however, admitted into it two species which seem more properly to belong to the genus *Acrochordus*, and which the reader will find so stationed in the present work.

Sea, or Water-Serpents, as Mr. Schneider observes, appear to have been known to the ancients; since they are mentioned by the Greek writers; *Ælian* quoting a passage from an anonymous author relative to snakes of very large size and with

flat tails, produced in the Indian sea. They are also mentioned by Arrian in the *Periplus Maris Erythræi*, &c. &c. Aristotle observes, that serpents are either of land or fresh water, or else of the sea, and that these latter have a resemblance in most particulars to Land-Snakes, but have a head like a Conger. It is probable, however, that some of the *Murænæ* were confounded by the ancients, as they are even by some of the moderns, with the real or proper Sea-Snakes.

COLUBRINE HYDRUS.

Hydrus Colubrinus. *H. plumbeus cingulis nigris*.

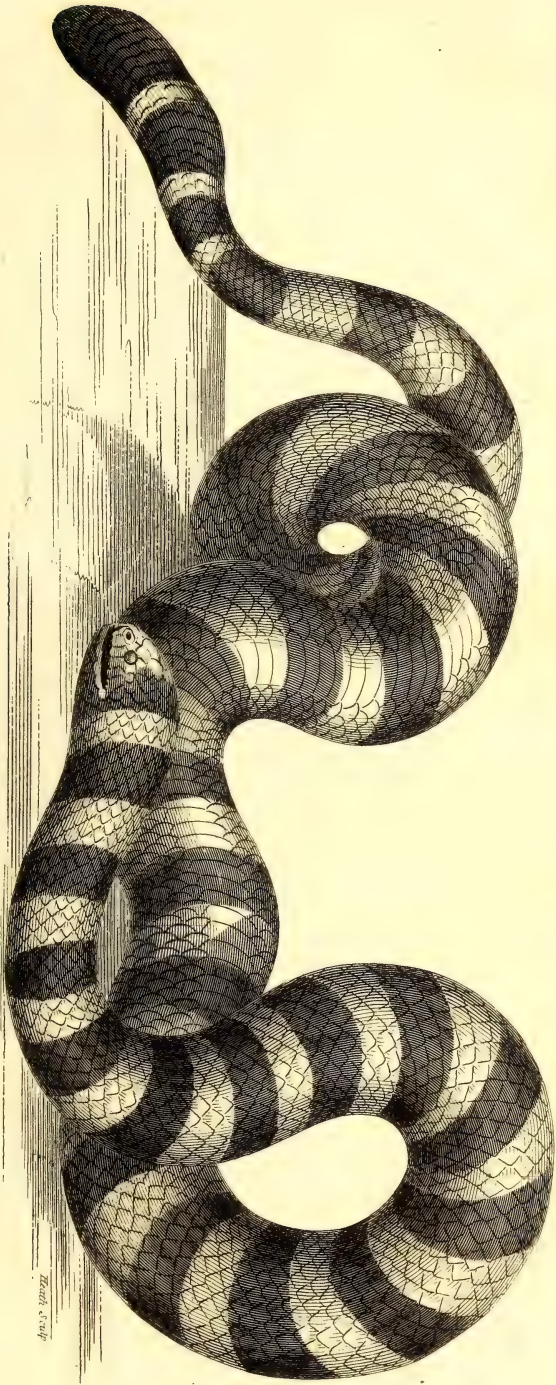
Lead-coloured Hydrus, with black surrounding bands.

Hydrus colubrinus. *Schneid. Amph. 1. p. 238.*

Coluber laticaudatus. *Lin. Syst. Nat. p. 383. Mus. Ad. Frid. p. 31. t. 16. f. 1.*

THIS species, which is much more nearly allied to the genus *Coluber* than any of the rest, is a native of the Indian and American seas, and is frequently seen towards the coasts of the southern islands in the Pacific. Its general length is about two feet and a half, but it probably grows to a much larger size: the head is covered with large scales: the body is cylindric, the tail terminating in a flattened and moderately dilated tip: along the whole length of the under parts is a series of scuta and of subcaudal scales, as in the genus *Coluber*, except that they are somewhat less distinctly continued under the compressed part of the tail: the colour of the whole animal is

COLUBRINE HYDRUS.



Zoot. & Nat.

a strong plumbeous or livid blue, with numerous, moderately broad, deep brown or blackish bands from head to tail, each completely surrounding the body, but being rather paler beneath than above: a slight tinge of yellow is also diffused along the abdomen and over the front of the head. This is a poisonous Serpent, but the fangs are remarkably small for the size of the animal.

CASPIAN HYDRUS.

Hydrus Caspius. *H. dorsi maculis nigris orbiculatis, cauda nigricante mucrone gemino, uno supra alterum posito.* Schneid. *Amph. fasc.* 1. p. 244.

Olivaceo-cinereous Hydrus, paler beneath, with black orbicular spots quincuncially disposed in four series down the back, and the tail terminated by a double point.

Coluber Hydrus. *Lin. Syst. Nat. Gmel. p.* 1103. *Pall. it.* 1. p. 459.

DESCRIBED by Dr. Pallas, and said to be found in the Rhine and the Caspian sea: length about three feet; colour olivaceo-cinereous, with four rows of orbicular black spots disposed in a quincuncial series down the back; abdomen yellowish, tessellated with black: a black band on each side the neck, meeting in a point behind the head, and accompanied by two oblong blackish spots: tail almost entirely black, and terminated by a small double point, one beneath the other: has the general habit of an *Anguis*, having a small head, small eyes with a yellow circle, two rows of small teeth, and a very long, black tongue.

GREAT HYDRUS.

Hydrus Major. *H. lividus, fasciis decurrentibus fuscis, squamis hexagonis abrupte carinatis.*

Livid Hydrus, with brown decurrent bands, and hexagonal abruptly carinated scales.

THIS is a large species, which does not appear to have been yet distinctly described. Its length is more than three feet: its colour pale or livid, marked throughout the whole length of the back by a series of large transverse, semi-decurrent dusky bands: the tail banded more deeply, or so as to shew less of the ground-colour: it is much strictured at the beginning, or place of the vent, and thence very considerably widens towards the tip, which is obtusely pointed: the length of the tail is about four inches, and the scales which cover it are of a somewhat square or lozenge form, and so disposed as to resemble in some degree those of a fish: they are all marked by an abrupt middle carina; the scales on the body are chiefly hexagonal, and are carinated in the same manner: those on the head large and angular: along the lower part of the abdomen runs a pretty strongly marked carina; the scales being not dilated into any appearance of scuta, but merely marked by a middle line of division on the very edge of the carina: the vent is surrounded by a row of large, strong, lengthened scales; and in one specimen are two strictures at the commencement of the tail, viz. at the place of the vent, and at about



GREAT HYDROT.

Hill sculp.

three quarters of an inch beyond it, the latter being terminated by a long, aculeated scale. This is a marine species, but its particular history seems to be unknown: it appears to be furnished on each side the upper jaw with a row of small teeth, one of which on each side is much larger than the rest, and on being examined with a lens, is evidently tubular, the slit towards the point being much longer in proportion than in that of the Rattle-Snake, and even forming a continued furrow along the greater part of the tooth. Native of the Indian seas.

VAR. ?

A SPECIMEN somewhat less than the former, is of a brown colour, the dorsal bands appearing much less distinct: but as both animals appear to have been long preserved in spirits, too much dependance should not be placed on this particular. These snakes are preserved in the British Museum, as is also another, which, in general form, length, &c. is allied to the preceding, but seems to have differed considerably in pattern and colour, the bands being yellow, decurrent, and becoming alternato-confluent beneath, so as to leave large round side-spots of the white ground-colour.

SLENDER HYDRUS.

Hydrus Gracilis. *H. corpore antcrius gracillimo squamis ovatis lævibus, posterius crassiore squamis hexagonis abrupte truncatis.*

Hydrus with the fore part of the body very slender, and covered with smooth ovate scales; the hind part thicker and covered with abruptly-carinated hexagonal scales.

LENGTH about two feet: head very small, or not of greater diameter than the neck, and covered with large scales: neck and fore part of the body very slender, not more than about a fifth of an inch in diameter, and cylindric for the distance of about seven inches, when it begins to enlarge and flatten into a carina on the upper part, which is continued to the end of the tail. The slender part above mentioned is covered with ovate smooth scales; the remainder of the animal with hexagonal ones, each marked with an abrupt central carina: the tail is about an inch and three quarters long, flat, and obtusely-acuminated, but not so broad as the thickest part of the body: its lower edge is less carinated than the upper, the row of hexagonal scales of the abdomen being continued on this part to the tip. The colour of the whole animal is now grown pale, but appears to have been banded all along the upper parts from head to tail with numerous, equidistant brown and somewhat obtusely pointed bands reaching almost to the abdomen, those on the small or cylindric part of the body being continued into annuli: the stricture or contraction at the place

of the vent is not so strongly marked as in the great Hydrus, to which this species appears allied in some particulars. It is preserved in the British Museum.

BLUEISH HYDRUS.

Hydrus Cærulescens. *H. cærulescens, fasciis decurrentibus cæruleis, abdomine albo.*

Blueish Hydrus, with dusky-blue decurrent bands, and white abdomen.

LENGTH two feet: habit resembling that of the Great Hydrus, but the abdomen has a single and perfectly undivided row of hexagonal scales, from the throat to the beginning of the tail, of about the tenth of an inch in diameter, and forming a flat carina on that part: back marked by a carina also, but the scales not differing in shape from those on the rest of the body, being hexagonal, with an abrupt middle carina: head not broader than the neck, and covered with large scales: tail two inches and a quarter long, and of the usual form in this genus, being moderately broad, but, as in the preceding animal, not equalling the thickest part of the body. Colour pale livid blue above, and white beneath, but marked throughout its whole length, as in the preceding species, by decurrent fasciæ of a deeper blue, and which dip on the white of the sides: they commence immediately from the head, the top of which is of a simi-

lar colour. It is an East-Indian species, and is preserved in the British Museum.

SHORT HYDRUS.

Hydrus Curtus. *H. flavescens curtus, fasciis decurrentibus subacuminatis fuscis, supra subconfluentibus.*

. Yellowish short Hydrus, with dusky decurrent subacuminated bands somewhat confluent above.

LENGTH about a foot: body compressed, and considerably thicker in proportion to its length than in any of the preceding: head flattish, covered with large scales: neck or fore part but little thinner than the rest of the body: tail about an inch long, and of the usual form: scales on all parts hexagonal, and small for the size of the animal: back carinated; abdomen more obtusely so, having a row of hexagonal scales: colour pale yellow, with a pretty close series of deeply decurrent dusky bands from head to tail, and so placed as to appear alternately confluent on the top of the back, more especially near the head. An East-Indian species. Preserved in the British Museum.

FASCIATED HYDRUS.

Hydrus Fasciatus. *H. niger, fasciis ascendentibus flavidis.*

Black Hydrus with ascendent yellowish bands.

Anguis laticauda. *Lin. Mus. Ad. Frid. 2. p. 43.*

Hydrus fasciatus. *Schneid. Amph. 1. p. 240.*

Tatta Pam. *Russel's Ind. Serp. pl. 44.*

THE Fasciated Hydrus is described and figured by Mr. Vosmaer, in his work on some of the rarer species of animals, as well as by Dr. Russel, in his publication on the Indian Serpents. It appears, from the account of Mr. Schneider, to arrive at a considerable size, though the specimen figured by Dr. Russel scarcely measures two feet in length: it is of a long and slender habit, and is of a black colour, fasciated throughout its whole length by pretty closely placed yellowish white pointed bands, rising upwards from the abdomen, and almost meeting at their tips on the ridge of the back: the head is small, or not broader than the neck, and is covered by large scales: the neck cylindric: the back carinated, the sides declining, and the belly roundish: the scales on the trunk, tail, and belly, orbicular, close, and not imbricated: the tail, which does not much exceed the diameter of the body, terminates obtusely, yet tipped with a point: the teeth are small; a marginal and two palatal rows appearing in the upper jaw; and, therefore, according to the general rule, it may be supposed not poisonous: Mr. Schneider, however, in the larger specimens which he exa-

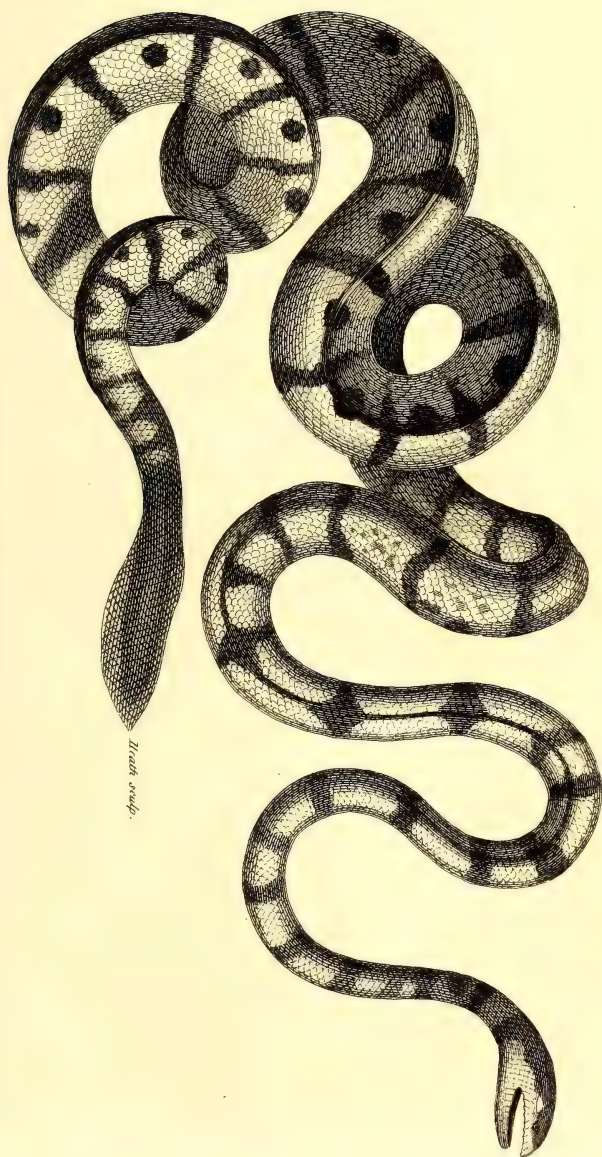
mined, observed a large curved fang-like tooth on each side, hid, as it were, in a sheath. This serpent is a native of the Indian seas: the specimen described by Dr. Russel was found on the sea beach at Vizagapatam, in August 1788, and appeared very alert in its motions; yet, when put into a vessel of sea water, in order to be kept for experiments relative to its bite, it very soon died.

SPIRAL HYDRUS.

Hydrus Spiralis. *H. flavescens fusco fasciatus, fasciis subtus in longitudinem confluentibus, corpore spiraliter contorto.*

Yellowish Hydrus with brown bands, longitudinally confluent beneath, and spirally contorted body.

THE present highly elegant species appears to have been hitherto unnoticed: its length is about two feet, and its habit slender: the body much compressed throughout; the back rising into a very sharp carina; the abdomen being also carinated, but having a flattened edge of scales somewhat wider than the rest, and measuring about the fifteenth of an inch in diameter: the head is small, and covered with large scales: the mouth wide; the scales on the whole animal moderately small, ovate, and slightly carinated: the ground colour is yellow, barred in a beautiful manner from head to tail with deep chesnut-brown or blackish fasciæ, each widening on the abdomen, and thus forming a highly distinct and handsome pattern when viewed on each side,



Brach. sculp.

SPIRAL HYDROTS.

seeming to constitute so many large, round, yellow spots on a blackish ground: the back, at about the middle, is marked, along its upper part, with a row of rather large, round, blackish spots situated between the fasciæ, and so placed as to be in some parts on one side, and in others on the opposite side of the dorsal carina, while some few are seated on the middle of the ridge itself: this variegation is continued to the tail, which is about an inch and three quarters long, black or deep brown, with a few yellow patches towards its beginning: it is remarkably broad for the size of the animal, and very thin on the edges, so as to be semitransparent on those parts. The most remarkable circumstance in this snake is the singular obliquity of its form; the body in different parts being alternately flatter on one side than the other, and the pattern completely expressed on the flattened side only; the other or more convex side being unmarked by the round spots, and lying as it were beneath; thus constituting several alternately spiral curves: this snake seems of an unusually stiff and elastic nature, and the carina on the back is so sharp as to surpass in this respect every other species of serpent. The specimen is in the British Museum, but its particular history seems to be unknown.

BLACK-BACKED HYDRUS.

Hydrus Bicolor. *H. capite oblongo, corpore supra nigro, infra flavido, cauda maculosa.*

Hydrus with oblong head, body black above and yellowish beneath, with spotted tail.

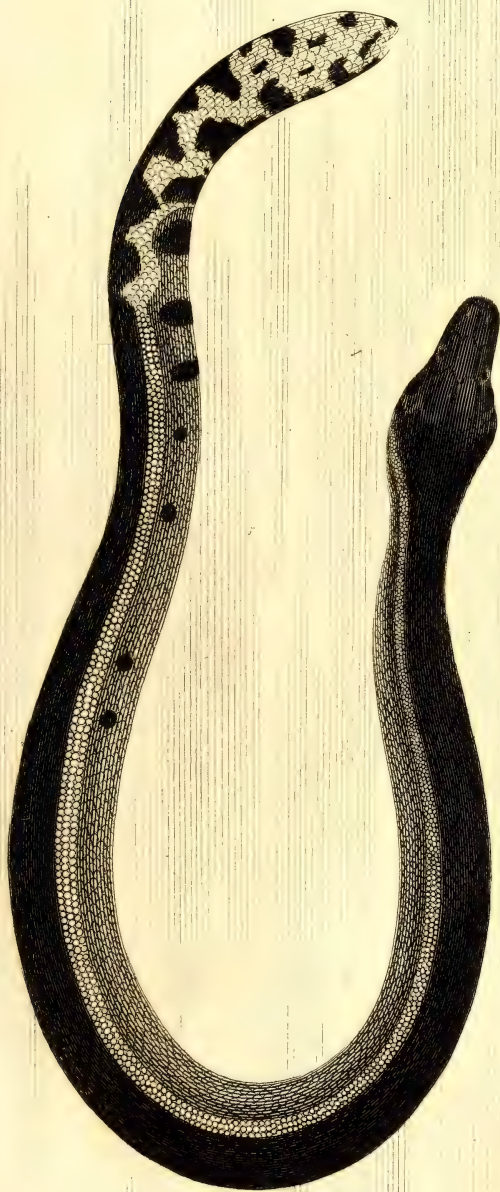
Hydrus bicolor. *Schneid. Amph. 1. p. 240.*

Anguis Platura. *Lin. Syst. Nat. p. 391.*

Nixboa Quanquecolla, seu serpens rara Mexicana cauda lata, *Seb. 2. p. 80. t. 77. f. 1.*

Nalla Wahlagillee Pam. *Russ. Ind. Serp. p. 47. pl. 41.*

THIS species is readily distinguished by the remarkable distribution of its colours; the head and upper parts being of a deep black, the lower parts pale yellow, and the tail spotted: along the sides runs a row of smaller scales than the rest, and of a brighter yellow: the head is black, and is of an elongated form in front, bulging behind, subconvex above, and a little compressed laterally: it is covered with large scales: the mouth is wide; the teeth small and numerous, there being a marginal and two palatal rows in the upper jaw: the body is compressed, and the back highly carinated: the scales orbicular and very minute: the general length about two feet and a half; the tail about three inches. It is a native of the Indian seas, and is said to be common near the coasts of the island of Otaheitee, where it is called by the name of *Etoona-toree*, and is used as an article of food.



BLACK-BACKED HYDRUS.

Hydrus vulp.

DARK-BLUE HYDRUS.

Hydrus Atrocæruleus. *H. atrocæruleus*, abdomine *flavescente*,
linea media cærulea.

Dark-blue Hydrus, with yellowish abdomen marked by a
 middle line of blue.

Mutta Pam. *Russ. Ind. Serp. p. 35. pl. 30.*

Hydrus Enydris. *Schneid. Amph. Fasch. 1. p. 245.*

LENGTH one foot eight inches: colour a very dark changeable blue; abdomen yellowish white, with a dark blueish line along the middle: head small, and covered with large scales: fore part of the body slender; circumference of the trunk, in the thickest part, about two inches and a quarter: tail short, small, taper, and compressed. This snake, which is described by Dr. Russel, was taken in an Indian lake called *Ankapilly*, in one of the traps employed for catching eels: it appeared to be harmless; having in the upper jaw a marginal and two palatal rows of small reflex teeth.

 CINEREOUS HYDRUS.

Hydrus Cinereus. *H. cinereus*, rostro *subtruncato*, abdomine *sub-flavescente*.

Ash-coloured Hydrus, with subtruncated snout, and abdomen tinged with yellow.

Hydrus Rynchops. *Schneid. Amph. 1. p. 246.*

Karoo Bokadam. *Russ. Ind. Serp. p. 23. pl. 17.*

LENGTH near three feet and a half: thickness near the head about three inches: middle of the

trunk four inches and a half: head somewhat broader than the neck, yet appearing small in proportion to the trunk: rather convex above, compressed on the sides, and projecting into a short obtuse or subtruncated snout, which is covered with smallish laminae of various sizes; the remainder of the head, as well as of the whole upper parts, with ovate or suborbicular carinated scales, smallest on the head: eyes small and vertical: mouth not large: teeth close set, not regular, small, and reflex; a marginal and two palatal rows in the upper jaw. Colour of the scaly part of the snout pale cinereous; the rest of the animal very deep grey or ash-colour: abdomen tinged with yellow: tail a little compressed, eight inches in length, moderately tapering, and terminating in an obtuse point. Sent to Dr. Russel from *Ganjam* in July 1788: the particulars of its history unknown: placed in this genus by Schneider from its habit and alliance with the preceding.

FISHING HYDRUS.

Hydrus Piscator. *H. fusco-flavescens, maculis rotundatis nigris lineisque connectentibus.*

Brownish-yellow Hydrus, with rounded black spots joined by connecting lines.

Hydrus Piscator. *Schneid. Amph. p. 247.*

Neeli Koea. *Russ. Ind. Serp. p. 38. pl. 33.*

LENGTH about two feet nine inches: circumference three inches and a half: head rather

broad, ovate, somewhat depressed, and laterally compressed; covered with large scales: tail eleven inches in length, slightly carinated, tapering very gradually, and terminating sharply: head dusky; rest of the animal yellowish brown, with numerous round black spots joined by narrow fillets regularly disposed in oblique rows, a few scales of light yellow being interspersed: abdomen yellowish white. Native of India, frequenting wet paddy fields, and commonly reckoned a water-snake: moves swiftly, and carries its head high, with a menacing air, in its progression, but when provoked did not either hiss or snap at a stick presented to it: was not provoked to bite a chicken, though pecked several times by the animal: during the time of this experiment it threw up a pretty large fish, which appeared to have been but a short time in the stomach: is not a poisonous species, the teeth resembling those of other innocuous serpents: does not very properly belong to this genus.

 MARSH HYDRUS.

Hydrus Palustris. *H. fusco-flavescens, maculis rhombeis fuscis lineisque interjectis, abdomine perlaceo.*

Brownish-yellow Hydrus, with rhomboid brown spots and interjected lines, and pearl coloured abdomen.

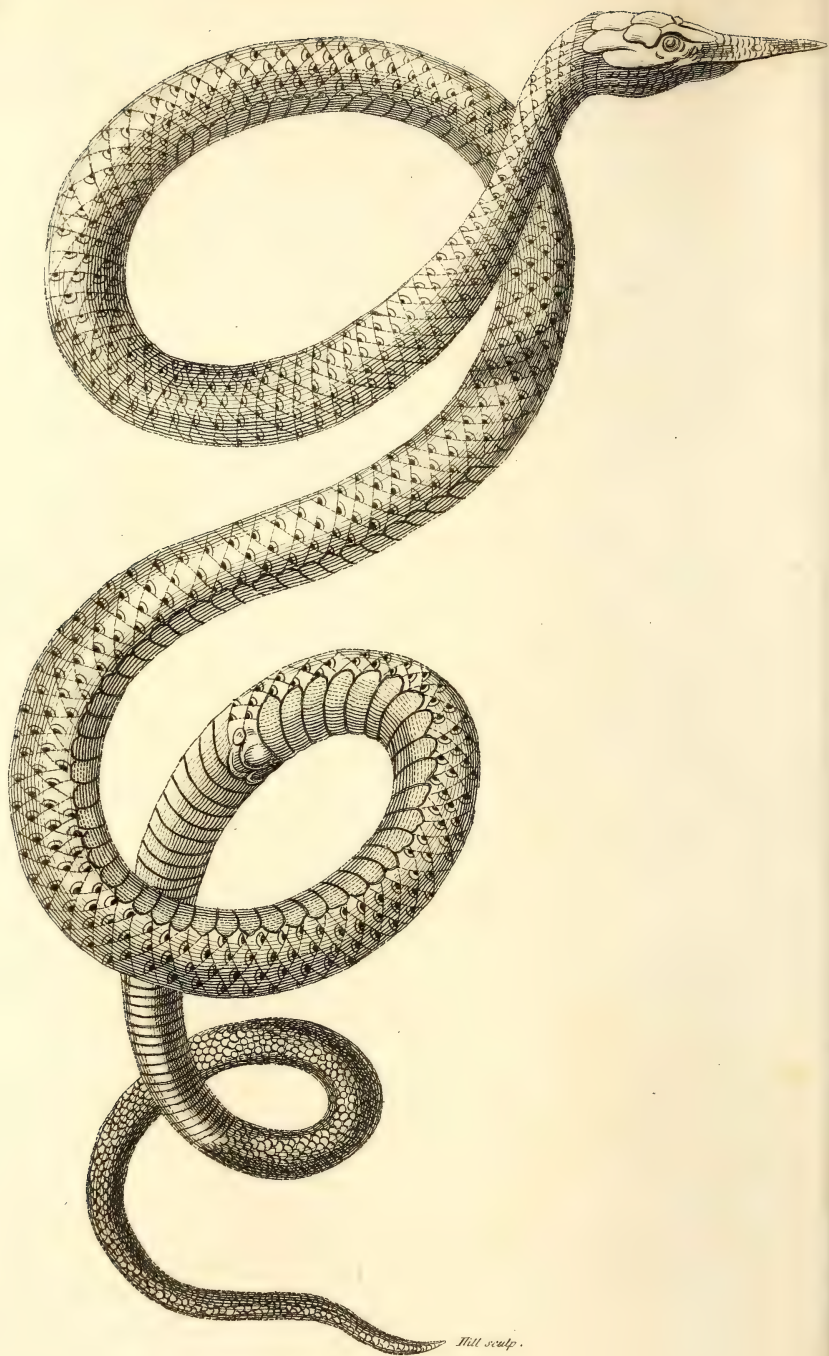
Hydrus palustris. *Schneid. Amph. p. 249.*

Paragoodoo. *Russ. Ind. Serp. p. 25, pl. 20.*

ALLIED to the preceding species: length more than two feet: trunk round; swelling and dimi-

nishing in a gradual manner: head broadish, oblong, covered with large scales: tail round, about five inches and a half long, and very taper: colour of the animal on the upper parts yellowish brown, beset with oblique rows of rhomboid brown spots with black borders, and between each range of spots runs a ferruginous line: the whole forming a decussated pattern of spots and lines: scales oblong and carinated: tail plain or unspotted: abdomen pearl-coloured. This species, according to Dr. Russel, is not uncommon in India, frequenting damp grounds, and the borders of tanks, and growing to a size much larger than that of the specimen above described: it is not a poisonous species: in reality it is not very properly stationed in the present genus, having neither flattened tail, nor carinated abdomen.





SNOUTED LANGAYA.

LANGAYA. LANGAYA.

Generic Character.

<i>Scuta abdominalia.</i>	Abdominal <i>Plates.</i>
<i>Annuli caudales.</i>	Caudal <i>Rings.</i>
<i>Squamæ terminales.</i>	Terminal <i>Scales.</i>

SNOUTED LANGAYA.

Langaya Nasuta. *L. maxilla superiore rostrata.*

Langaya with the upper jaw produced in form of a snout.

Langaha. *Bruguiere. Journ. de Physique*, 1784. *Cepede Ovip.*
2. p. 469.

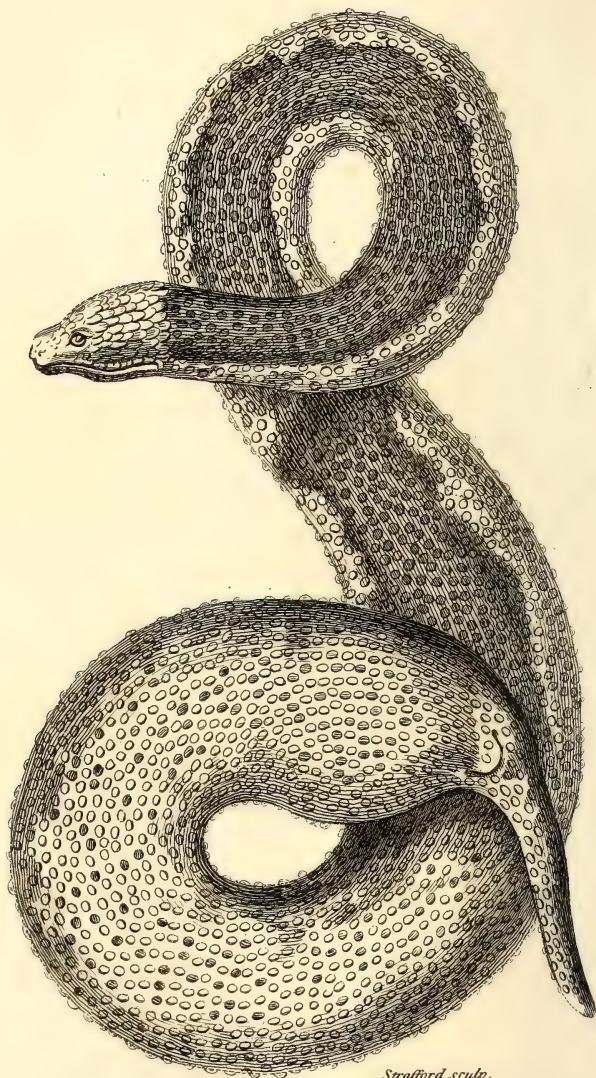
Abdominal scales 184, caudal rings 42.

THE genus *Langaya*, consisting of a single species only, differs from all the rest of the serpent tribe in having the upper part or beginning of the tail marked into complete rings or circular divisions resembling those on the body of the *Amphisbæna*, while the extreme or terminal part is covered with small scales, as in the genus *Anguis*.

The *Langaya nasuta*, or Long-snouted *Langaya*, is a native of Madagascar, and appears to have been first described by Mons. Bruguiere of the Royal Society of Montpellier, whose account of it is inserted in the *Journal de Physique* for the

year 1784. The length of the individual described was about two feet eight inches, and its greatest diameter about seven lines: the head is covered with large scales, but the snout, which is extremely long and sharp, projecting to a considerable distance beyond the lower jaw, is covered with very small scales: the teeth, in shape and disposition, resemble those of a Viper: the scales on the upper parts of the body are rhomboidal, of a reddish colour, and each marked at the base by a small grey circle, with a yellow spot in the middle: the under parts are pale or whitish: the number of abdominal scuta, as well as of circles on the tail, is observed to vary in this snake, as is also the colour, which in one individual was violet, with darker coloured specks on the back. The natives of Madagascar are said to hold the Langaya in great dread, considering it as a highly poisonous serpent.

JAVAN ACROCHORDUS .

*Stratford sculp.*

ACROCHORDUS. ACROCHORDUS.

Generic Character.

Corpus caudaque undique ver- || *Body and tail* completely co-
rucosa. || *vered with warts.*

JAVAN ACROCHORDUS.

Acrochordus Javanicus. *A. nigricans, subtus albidus, lateribus fusco maculatis.*

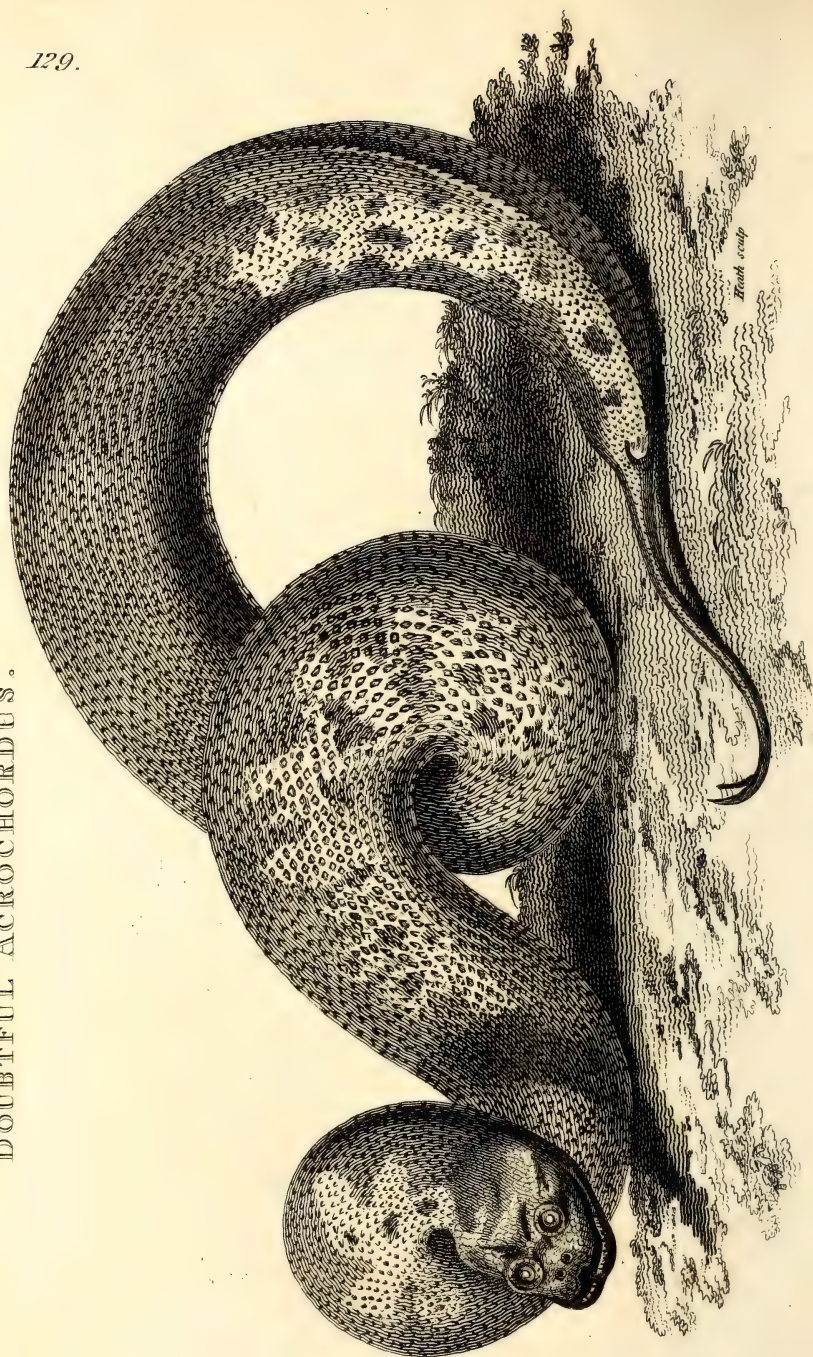
Blackish *Acrochordus*, whitish beneath, with the sides marked by dusky spots.

Acrochordus Javanicus. *Hornst. Act. Stocholm. 1787.*

THE remarkable snake which gave rise to the institution of this new genus, is a native of the island of Java, and was first described by Mr. Hornsted in the Swedish Transactions for the year 1787, and in the *Journal de Physique* for the year 1788. It was found in a large pepper-ground near Sangasan, in the year 1784, and measured about eight feet in length; the thickness of the neck being six inches, that of the largest part of the body ten inches, and that of the tail an inch and half: the colour of the upper part of the animal was blackish, and of the under part whitish; the sides marked with dusky spots: the head trun-

cated, depressed, and scaly: the jaws equal, the superior being emarginated beneath; the inferior curved: the eyes lateral, on the fore part of the head; the irides livid: the nostrils circular, small, approximated, and situated above the tip of the snout: the rictus or gape rather small for the size of the body: the teeth in both jaws subulate, very sharp, and reversed, without any appearance of fangs, and accompanied by a double row of very small teeth in the palate: the tongue thick at the base, the forked part black and slender: the body entirely covered, as well as the tail, with rough tricarinated warts: the vent small, the body very suddenly tapering towards the tail. This snake was secured by a Chinese, by means of a split bamboo applied over its neck, and thus carried to Batavia, where, on being skinned and opened, exclusive of a quantity of indigested fruit, were found five completely formed young, measuring nine inches each: the flesh of the animal was eaten by the Chinese people, who affirmed that it was excellent food, and the skin, being preserved in spirits, was brought over to Europe by Mr. Hornsted, and deposited in the Museum of the King of Sweden.

DOUBTFUL ACROCHORDUS.



DOUBTFUL ACROCHORDUS.

Acrochordus Dubius. *A. fuscus, abdomine carinato, lateribus nigro-maculatis.*

Brown Acrochordus, with carinated abdomen, and sides spotted with black.

IN its general appearance and proportion so very nearly does the present serpent resemble the preceding or Javan species, that one description might almost serve for both, except that the head in this is covered with very minute rough or warted scales, differing in size alone from those on other parts of the animal, whereas, if we may rely on the accuracy of Mr. Hornsted's description and figure of the Javan Acrochordus, that part is covered with flat, ovate scales, and of a far different appearance from the mucicated or wart-like scales on every other part. The size of the present specimen also falls much short of the former, measuring only about three feet in length: its colour is an obscure brown, with some ill-defined clouds and patches of a darker colour dispersed along the sides and abdomen: the shape of the vent, thickness of body, and sudden contraction at the beginning of the tail, as well as the comparative size and shape of that part are exactly similar: the abdomen, however, in this serpent is slightly carinated beneath towards the tail, which is a circumstance not particularized in Mr.

Hornsted's description of the Javan species. The present specimen is in the British Museum, and the highly accurate engraving which accompanies this article will shew in the most satisfactory manner the resemblances and discrepancies between this and the former animal. Its native place is not particularized.

FASCIATED ACROCHORDUS.

Acrochordus Fasciatus. A. fuliginosus, abdomine carinato, fasciis lateralibus ascendentibus albidis.

Fuliginous Acrochordus, with carinated abdomen, and whitish ascendent lateral bands.

Hydrus granulatus. H. corpore scabro fuliginoso, fasciis albis in ventre latioribus cincto. Schneid. Amph. Fasc. 1. p. 243.

THIS is so much allied to the preceding, that it may perhaps be doubted whether it really differs in any other respect than age, size, and cast of colours, measuring about eighteen inches in length, and being of a dusky-brown colour, with several paler fasciæ which take their rise from the abdomen, and ascend on the sides: the abdomen is carinated, as in the former. This is certainly the *Hydrus granulatus* of Mr. Schneider, who, in his work on the Amphibia, describes it as a water-snake, though, seemingly, without any other foundation than its having a carinated abdomen; its other characters by no means agreeing with

FASCIATED ACHROCHORDUS.



Head, vulp.

those of the genuine Hydri. Mr. Schneider observes its near affinity with the Hornstedian Acrochordus, but mentions nothing particular relative to its native place. The specimen is in the British Museum, and is very accurately represented on the annexed plate.

ANGUIS. SLOW-WORM.

Generic Character.

<i>Squamæ</i> abdominales et sub- caudales.		<i>Scales</i> both on the abdomen and beneath the tail.
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THIS genus is easily distinguished by having the abdomen and under part of the tail covered with scales of similar appearance to those on the rest of the animal, except that in some few species they are rather larger: to this may be added, that the body is of a shorter and more uniformly cylindric form than in the genus *Coluber*, and that the eyes are, in general, small, and the tail rather obtuse: no poisonous species of *Anguis* has yet been discovered. To the English generic title, *Slow-Worm*, some objection may perhaps be made, and it is not to be imagined that all the animals of this genus are remarkably slow in their motions; though, from the want of scuta, they perhaps may be allowed to move with less rapidity than the generality of Snakes.

COMMON SLOW-WORM.

Anguis Fragilis. *A. griseo-rufescens, dorso fusco-striato, abdomine plumbeo.*

Rufous-grey Slow-Worm, with the back striated with brown, and lead-coloured abdomen.

Anguis fragilis. *Lin. Syst. Nat. p. 923. Laur. t. 5. f. 2.*

Cæcilia. *Aldr. Gesn. Raj. Jonst. &c.*

Blind-Worm. *Penn. Brit. Zool. 4. p. 23. pl. 4.*

Long-Cripple. *Borl. Corrw. p. 284. pl. 28. mala.*

Abdominal scales 135, subcaudal 135.

THIS species is found in almost all parts of Europe in similar situations with the common Snake, and is a perfectly innoxious animal, living on worms and insects: its usual length is from ten to twelve inches, and sometimes even more: its colour is pale rufous brown above, with three narrow longitudinal dorsal streaks or lines of a darker cast; and beneath a deep lead-colour: the head is rather small, and covered in front with large scales, as in most other innoxious serpents: the eyes are very small: the tail measures more than half the length of the animal, and terminates pretty suddenly in a slightly acuminate tip. The Slow-Worm is a viviparous animal, and sometimes produces a very numerous offspring: like other serpents, it varies in intensity of colours at different periods, and the young are commonly of a deeper cast than their parent: the general motions of this animal are rather slow than otherwise, except when endeavouring to escape; and the young seem to move more slowly than

the full grown ones: Slow-Worms can, however, occasionally exert a considerable degree of swiftness, and can readily penetrate the loose soil, in order to conceal themselves from pursuit: they are often found in considerable numbers, during the winter season, at some depth beneath the surface; retiring on the approach of winter, and lying in a state of torpidity, and again emerging from their concealments on the approach of spring, when they cast their skin, and recover their former liveliness. It is observed of this species, as well as of some others, that if struck with any degree of violence, the body not only breaks abruptly on the struck part, but even sometimes at different places: the skin is remarkably strong, and the animal, when handled or irritated, has a way of stiffening itself by stretching to its utmost length, in which state, if any part of the skin be injured, the separation soon takes place in consequence of this rigidity, instead of yielding like the more limber bodies of the snakes.

Var.?

ABERDEEN SLOW-WORM.

Anguis Eryx? *Lin. Syst. Nat. p. 923. Penn. Brit. Zool. 3, p. 33.*

Abdominal scales 126, subcaudal 136.

THIS seems to be no other than a variety of the *A. fragilis*, differing merely in being something larger, and of rather darker colours: found in

some parts of Scotland, and, according to Linnæus, in America also.

SPECKLED SLOW-WORM.

Anguis Meleagris. *A. griseo-rufescens, undique fusco-punctata.*

Rufous-grey Slow-Worm, speckled on all sides with brown.

Anguis Meleagris. *Lin. Syst. Nat. p. 390.*

Serpens Cæcilia seu Scytale. *Seb. 2. t. 21. f. 4.*

Abdominal scales 165, subcaudal 32.

THIS, according to Seba's figure quoted by Linnæus, appears so nearly allied to the common Slow-Worm that it might almost be considered as the same animal, differing in the want of the dorsal streaks, and in having the whole upper surface freckled with minute deep-brown specks, the tip of each scale being of that colour: it is a native of the East Indies.

PAINTED SLOW-WORM.

Anguis Scytale. *A. fulva, fasciis alternis nigris.*

Fulvous Slow-Worm, with alternate black bands.

Anguis Scytale. *Lin. Syst. Nat. p. 923. Mus. Ad. Frid. p. 21. t. 6. f. 2.*

Merian Surin. t. 69.

Abdominal scales 240, subcaudal 13.

THE Painted Slow-Worm is a species of singular beauty: its general length is about a foot and half or two feet, and its diameter moderate in

proportion: the ground-colour is a rich yellow-ferruginous or orange, on which are disposed, throughout the whole length of the animal, numerous, moderately broad, equidistant, jet-black transverse bands, not continued entirely round the body, but alternating with each other, and terminating in rounded extremities: the scales on the intermediate parts are generally tipped with brown, exhibiting more or less of a speckled appearance on the skin: when this animal, however, has been preserved for any considerable length of time in spirits, the orange-colour fades into white, in consequence of which, the specimens usually seen in Museums appear variegated only with black and white: the head is small, and the tail very short, viz. not above one twentieth of the whole length, and terminating obtusely: this species is a native of South America and some of the West-Indian islands.

CORAL SLOW-WORM.

Anguis Corallina. *A. rubescens, sanguineo-variatus.*

Pale-red Slow-Worm, with blood-red variegations.

Anguis corallinus. *Lin. Syst. Nat. Gmel. p. 1123.*

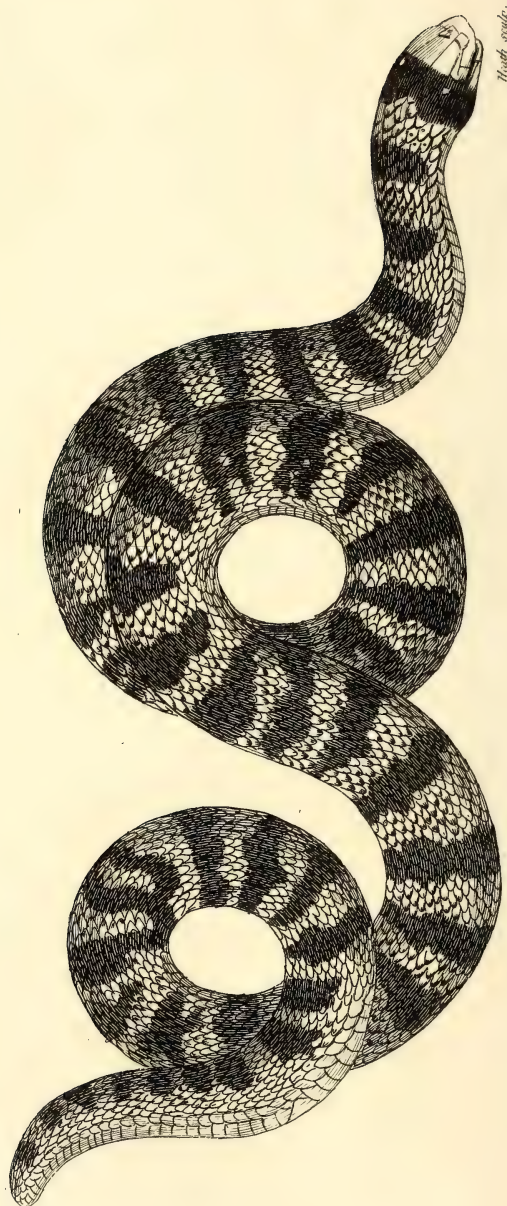
Serpens coralloides Brasiliensis rubra. *Seb. 2. t. 73. f. 2.*

A LARGE and highly elegant species: length about a foot and half: thickness very considerable: ground-colour pale red, with very broad alternating fasciæ and variegations of deep coral red: the scales are moderately large, and of a



CORAL SLOW-WORM.

Head enlarged.



Black-banded.

BLACK-BANDED SLOW-WORM.

rounded form, and the head and tail are remarkably obtuse. This beautiful animal is a native of South America, where it is said to be found in woods, and to prey on the larger insects, as scolopendræ, &c. &c. : in colour it sometimes varies, a mixture of black being blended with the red on the sides, and the bands more numerous in some specimens than in others.

BLACK-BANDED SLOW-WORM.

Anguis Ater. *A. albus nigro fasciatus.*

White Slow-Worm, with black bands.

Anguis Ater. *Lin. Syst. Nat. Gmel. p. 1123.*

Amphisbæna Ceylonica foemina. *Seb. 2. t. 73. f. 3.*

MUCH allied in general appearance to the preceding, but differing in colour, being white with black bands: the abdominal scales, according to Seba's figure, on the authority of which this species is given, are somewhat dilated, so as to approach in some degree to those in the genus *Coluber*: native of South America.

GLASS SLOW-WORM.

Anguis Ventralis. *A. nigro-virescens, flavo punctatus, abdomine brevissimo flavo, sulco laterali.*

Blackish-green Slow-Worm, speckled with yellow, with very short yellow abdomen, with a lateral furrow.

Anguis ventralis. *Lin. Syst. Nat. p. 923.*

Glass Snake. *Catesb. Carol. 2. pl. 59.*

Abdominal scales 127, subcaudal 222.

THIS is a moderately large and handsome species: general length about a foot and half or two feet: colour greenish brown, elegantly mottled with small pale yellow and black freckles: the under parts pale yellow: the head small: from the corners of the mouth to the vent, along each side of the body, runs a deep furrow, separating the abdomen, which is remarkably short, from the upper parts: the tail is more than twice the length of the abdomen, and terminates somewhat more acutely than is usual in this genus: the body is marked above by several rows of slightly elevated striæ, which give the animal a general resemblance, except in colour, to the remarkable lizard termed *Lacerta apoda*. This species is a native of North America, and is not uncommon in Carolina, where it is known by the name of the Glass Snake. Catesby informs us that “a small blow of a stick causes the body to separate, not only at the place struck, but at two or three other places, the muscles being articulated quite through the vertebrae.”

SPOTTED SLOW-WORM.

Anguis Maculata. A. flava, tænia dorsali alternato-fasciata nigra.

Yellow Slow-Worm, with an alternately-fasciated black dorsal band.

Anguis maculata. Lin. Syst. Nat. p. 391. Mus. Ad. Frid. p. 21. t. 21. f. 3.

Tucuman, &c. dicta Serpens ex Paraguaja. Seb. 2. t. 100. f. 2.

Serpens Amphisbæna orientalis. Seb. 1. t. 53. f. 7.

Abdominal scales 200, subcaudal 12.

LENGTH about a foot and half or two feet: thickness moderate: colour yellow or orange, with a black dorsal line, on each side of which are numerous, narrow, alternating, transverse bands of the same colour, continued throughout the whole length: the abdomen is traversed by less numerous but broader bands of a dusky colour: native of South America.

VAR. ?

WITH red instead of black variegations.

BLACK-SPOTTED SLOW-WORM?

Anguis? leucomelas. *A. albus*, serie triplici vel quadruplici macularum dorsalium nigrarum.

White, Slow-Worm? with a triple or quadruple dorsal series of black spots.

Vipera Brasiliensis Tetzauhcoatl dicta. Seb. 2. t. 78. f. 2, 3.

A BEAUTIFUL serpent; figured in the work of Seba: length about two feet: colour above milk-white, with a triple row of black spots down the upper part, the middle range being divided by a narrow fillet of the white ground-colour: sides and abdomen tinged with yellow: head white, large-scaled, and minutely speckled with black: tail rather short, and terminating somewhat obtusely: this species has the habit of a *Coluber* in some degree, and is said by Seba to be smooth, round, and plump, with an obtuse tail.

 RUFOUS SLOW-WORM.

Anguis Rufa. A. tota cupreo-rufa.

Slow-Worm entirely of a coppery rufous colour.

Amphisbæna Amboinensis, squamis rubicundis obducta. Seb. 2. t. 7. f. 4.

LENGTH about a foot and half: thickness moderate: colour a uniform high rufous or coppery brown, with a white spot near the tip of the tail: scales of moderate size, rounded, and each marked by a dusky central speck: native of Amboina.

RETICULATED SLOW-WORM.

Anguis Reticulata. A. rosea, squamis rhombeis cutē interjecta alba reticulatis.

Rose-coloured Slow-Worm, with rhomboid scales, reticulated by the interstitial white skin.

Amphisbæna Amboinensis, corio quasi reticulato conspicua.
Seb. 2. t. 7. f. 3.

OF similar size and habit with the preceding, but of a strong or deep rose-colour, covered with rhomboid scales, so placed as every where to leave decussations of white between the several rows, the skin appearing through the interstices: along the sides are a few oblong white patches, which form a kind of fasciæ as they approach the tail, the tip of which is white: the head is also obscurely surrounded by a white zone: native of Amboina.

 SNOUTED SLOW-WORM.

Anguis Nasuta. A. atroviresens, subtus flava, naso elongato.

Greenish-black Slow-Worm, yellow beneath, with elongated snout.

Anguis rostratus. C. L. Weigel Mem. des Curieux de la Nature de Berlin, 3. p. 190.

Abdominal scales 218, subcaudal 12.

DESCRIBED by Mr. Weigel in the Berlin Memoirs: length about a foot: colour greenish black above, and yellow beneath, extending in some parts a little way up the sides: upper lip consider-

ably longer than the lower, and marked on the tip by a yellow spot: tail terminated by a horny tip, and marked by a yellow spot and two oblique yellow bands: native of Surinam.

JAMAICA SLOW-WORM.

Anguis Jamaicensis. A. subargenteo-fuscescens, corpore sensim in-
crassato, cauda abrupte subacuminata.

Silvery-brownish Slow-Worm, with the body gradually thickening, and the tail abruptly subacuminate.

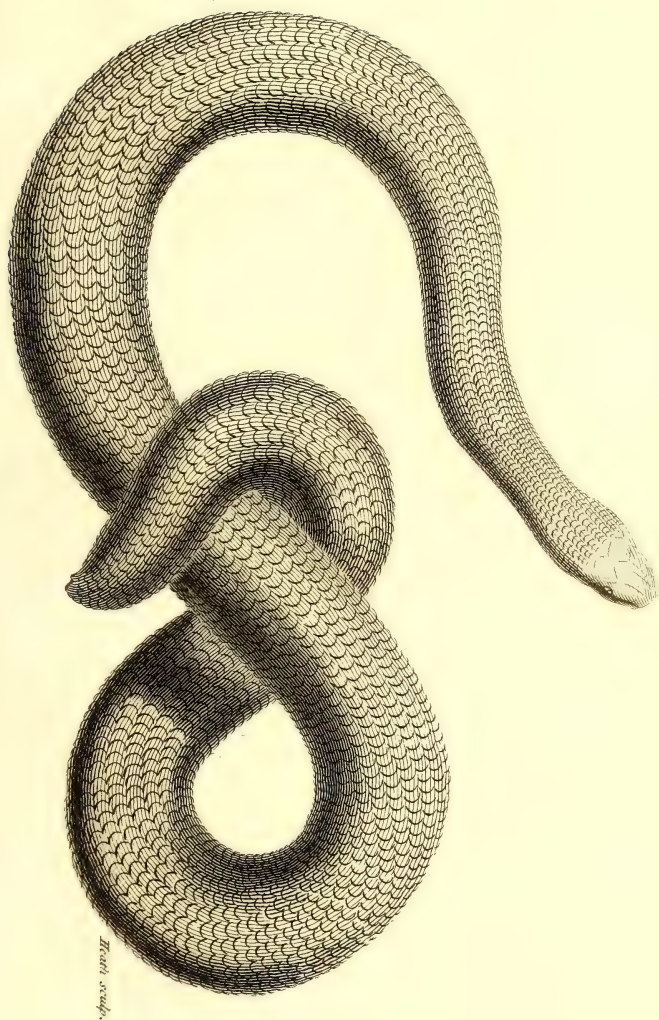
Amphisbæna subargentea. Silver Snake. *Brown Jam. p. 460. pl. 44. f. 1.*

Serpens Cæcilia ex Mauritania. Seb. 1. t. 87. f. 2.

Anguis lumbricalis? *Lin. Syst. Nat. p. 391.*

THE length of this species, according to Brown, in his History of Jamaica, seldom exceeds sixteen inches, and the diameter of the animal gradually increases from the snout to the tail, which is extremely short, and terminates in a slightly pointed extremity: it is found about the roots of decayed trees, near ants' nests, &c. and though popularly considered as poisonous, is entirely innocuous: its colour is a uniform pale brown, with a kind of silvery gloss on the scales, which are extremely smooth, resembling in some degree those of the Scink.

JAMAICA SLOW-WORM.

*H. Smith sculp.*

PUNCTULATED SLOW-WORM.

Rondoo Talooloo Pam. *Russ. Ind. Serp.* p. 48. *pl.* 43.

A SMALL species, about six inches in length, and of the diameter of a hen quill, cream-coloured, and powdered with innumerable black dots: tail most extremely short and subacuminate. This species is described in Dr. Russel's work on the Indian Serpents: it is common in *Vizagapatam*, and is vulgarly considered as mischievous: it moves with incredible swiftness, and a specimen immersed in spirits remained alive more than ten minutes.

Dr. Russel describes and figures a larger species under the same name, which seems to be no other than a variety of the *A. Meleagris*, differing in having a longer tail than usual.

CLIVIAN SLOW-WORM.

Anguis Clivica. *A. ex cinereo fusca, frontis scuto majori cordato.*
Cinereous-brown Slow-Worm, with a large cordated frontal scale.

Anguis Clivicus. *Lin. Lyst. Nat. Gmel.* p. 1122. *Gesn. Serp.* p. 69.

Abdominal scales 177, subcaudal 37. *Gronov.*

SAID to be frequent in the Dutchy of Cleves, but seems a species not yet completely described.

SEBAN SLOW-WORM.

Scytalæ Americanæ. Seb. 2. t. 2. f. 1, 2, 3, 4.

A SMALL species, figured and slightly described in the work of Seba: length about ten inches: general proportions those of the common Slow-Worm: colour very pale yellowish brown, thickly speckled with pale blue, brown, and black spots: head in some specimens reddish, in others blue: native of South America.



Hill sculp

WHITE AMPHISBENA.

AMPHISBÆNA. AMPHISBÆNA.

*Generic Character.**Corpus* teres, æquale.*Annuli* trunci caudæque.|| *Body* cylindric, equal.|| *Annular divisions* both on
body and tail.

WHITE AMPHISBÆNA.

Amphisbæna Alba. *A. tota alba.**Amphisbæna* entirely white.*Amphisbæna alba.* *Lin. Syst. Nat. p. 393. Mus. Ad. Frid.*
*p. 20. t. 6. f. 2.**Serpens Cæcilia Americana.* *Seb. 2. p. 25. t. 24. f. 1.*

THE remarkable genus *Amphisbæna*, much allied to that of *Anguis*, and even, in some degree, to that of *Lacerta*, is very readily distinguished by the manner in which the exterior surface of its skin is marked into well-defined numerous circles or rings completely surrounding the body, and divided in a longitudinal direction by still more numerous strait lines; thus forming so many square or parallelogrammic scales. Only two species of this genus have hitherto been discovered, of which the present is the largest, measuring from fifteen or eighteen inches to two feet

or more in length, and being of a considerable thickness in proportion: its form is equally cylindric throughout; the head, which is covered with large scales, being of scarce greater diameter than the body, and the tail, which is very short, terminating in a rounded extremity. The colour of this species is white, but in some specimens tinged with pale rose-colour, while in others the head and back incline to a pale yellowish or brownish cast: the head is very short, the eyes very small, the snout obtuse, the mouth of moderate width, the teeth short, strong, not very sharply pointed, and constituting a single row of about fourteen or sixteen in each jaw: the tongue is very large, broad, thick, flattish, and bifid only at the tip, the surface of the base appearing scaly: the tail, in specimens of about two feet, is scarcely more than two inches * in length: the usual number of circles in this snake is observed to be about two hundred and twenty-three on the body, and sixteen on the tail. It is a native of South America, where it is found in woods, preying on insects, worms, &c. It is a harmless animal, but it is said that on handling it for some time the skin becomes affected with a slight itching, accompanied by small pustules, owing to an acrimonious moisture, exsuding from the animal.

* In the Museum Adolphi Friderici the tail of this species is mistakenly said to be a sixth part of the whole length instead of a twelfth.



FULIGINOUS AMPHISBENA.

FULIGINOUS AMPHISBÆNA.

Amphisbæna Fuliginosa. *A. albo nigroque varia.*

Amphisbæna with black and white variegations.

A. fuliginosa. *Lin. Syst. Nat. p. 923.*

Amphisbæna, Apamea, &c. &c. *Seb. 1. t. 88. and 2. t. 118.*
22. 24. 73. 100, &c.

THIS, which seems rarely to equal the preceding in size, is at all times readily distinguished by its colours; the general cast being a purplish or blackish brown, variegated in an irregular manner on all sides by scattered and broken patches of yellowish white, the outlines or divisions of each variegation being always rectangular: the general form is the same as in the preceding species, but the head is rather longer in proportion: the skin is very strong, and the divisions both of the annuli and scales extremely distinct or strongly marked: sometimes it varies in its colours, exhibiting pretty vivid variegations of yellow on a purple or violet ground-colour; and at other times an equally remarkable contrast of black and white: it is probable that in the living animal there is always a cast of purple or violet in the ground-colour, and of yellow in the variegations. It is by no means uncommon in many parts of South America, resembling the former species in its manners, and being equally innoxious. The Count de Cepede observes, that above the vent is a row of small perforated papillæ, similar to

those in many of the Lizard tribe. The skin of the Amphisbænæ is remarkably strong and tenacious, and of a smooth or glossy surface, and it is probable that they are enabled with great facility to perforate the ground somewhat in the manner of earthworms, in order to obtain occasional supplies of food.



EEL-SHAPED CŒCILIA.

CÆCILIA. CÆCILIA.

Generic Character.

<i>Corpus</i> teres, æquales.		<i>Body</i> cylindric, equal.
<i>Rugæ</i> laterales trunci caudæque.		<i>Wrinkles</i> on the sides both of body and tail.

EEL-SHAPED CÆCILIA.

Cæcilia Tentaculata. *C. anguilliformis, rugis distantibus, rostro tentaculato.*

Eel-shaped Cæcilia, with distant wrinkles and tentaculated snout.

Cæcilia tentaculata. *Amoen. Acad.* 1. p. 498. t. 13. f. 1.

L'Ibiare. *Cepede Ovip.* p. 466. pl. 21.

THE length of this species is about a foot, and its general appearance that of a small Eel: its colour is a livid brown, the abdomen paler or whitish: the head is not larger than the beginning of the trunk, and it is of a somewhat taper form, the upper lip projecting beyond the lower: the eyes are extremely small: the nostrils seated at the tip of the snout, and immediately beneath each is an extremely small cirrhus or beard: the mouth is furnished in each jaw with a row of very small sharp teeth: across the sides of the body, from

head to tail, run numerous, semi-annular, and pretty distinct furrows or wrinkles, which are about a hundred and thirty-five in number; those on the upper parts being moderately distant from each other, but becoming more close or numerous as they approach the extremity, almost immediately beneath which is situated the vent, there being, properly speaking, no distinct tail: the skin of the whole body when closely inspected, is found to be covered with extremely minute papillæ or granules. This animal seems to have been first described and figured in the *Amoenitates Academicæ*. It is a native of South America, and is said to be of an innoxious nature. The specimen in the British Museum measures at least eighteen inches in length, the wrinkles on the sides being a fifth of an inch distant from each other: those near the extremity the tenth or twelfth of an inch.

WHITE-SIDED CÆCILIA.

Cæcilia Glutinosa. *C. fusca, rugis confertissimis, linea laterali albida.*

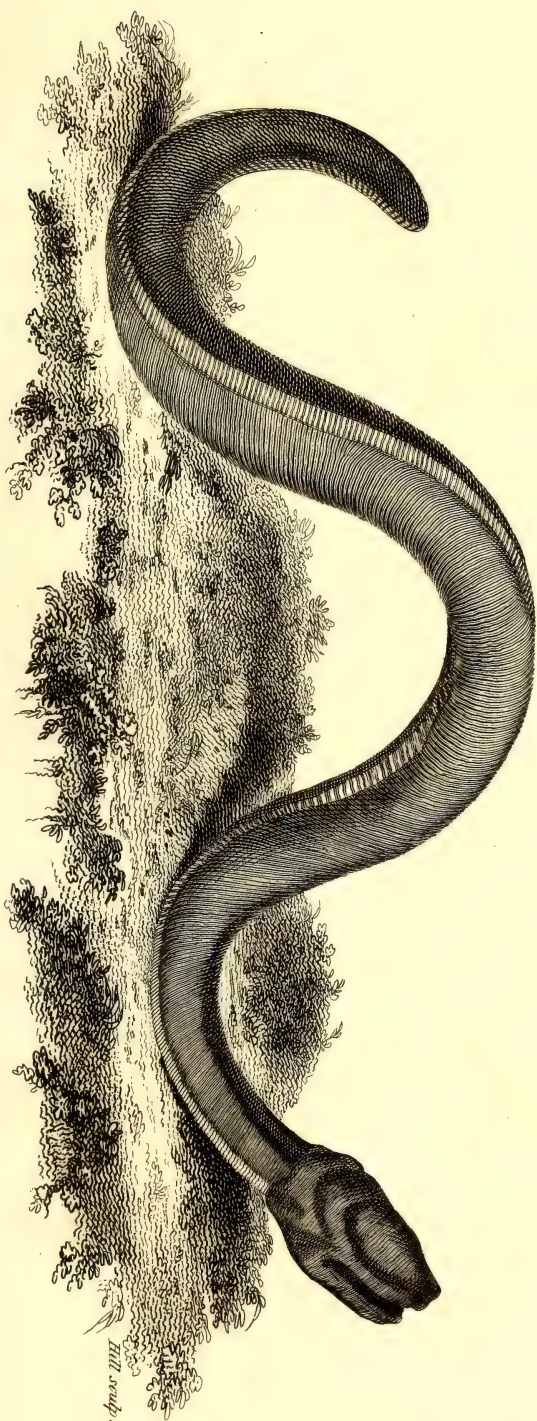
Brown *Cæcilia*, with extremely close wrinkles, and whitish lateral line.

Serpens Cæcilia Ceilonica. *Seb. 2. p. 26. t. 25. f. 2.*

Cæcilia glutinosa. *Lin. Syst. Nat. p. 393. Mus. Ad. Frid. p. 19. t. 6. f. 1.*

This, which was first described by Seba, is about the same length and diameter with the former, but has a large, tumid head, and wider nostrils, with-

WHITE-SIDED CECILIA.

*Hill sculp.*

out any appearance of tentacula: the colour of both head and body is deep brown, and along each side runs a broad whitish stripe; the wrinkles are extremely close and numerous, and disposed in such a manner as to form a slight carina along the sides on the white stripe. It is a native of South America: the individual described by Linnaeus in the Mus. Ad. Frid. is said to have had a small head, but in every other respect appears to have resembled Seba's specimen.

SLENDER CÆCILIA.

Cæcilia Gracilis. *C. fusca, lumbriciformis.*

Brown Cæcilia, resembling an earth-worm in shape.

Cæcilia tentaculata. *Mus. Ad. Frid. p. 19. t. 5. f. 2.*

LENGTH thirteen inches and three quarters: diameter, which is perfectly equal throughout, one fifth of an inch: skin smooth, but when closely examined appearing most minutely granulated: rugæ lateral, semi-annular, not strongly marked, and about the tenth of an inch distant from each other: head not perceptibly larger than the body, and obtusely tapering at the mouth: upper jaw longer than the lower, the mouth being placed somewhat beneath; about the eighth of an inch wide: teeth not distinctly visible, but may be felt in both jaws by means of a pin: nostrils small, rather distant, and seated at the tip of the snout on

each side: at a small distance between these are two minute papillæ or tentacula: vent immediately beneath the tip of the tail, small, and by its outline forming eight or nine crenatures round the foramen: rugæ for about an inch before the end closer than on the rest of the body: skin of the head perfectly smooth, or without the minute granulations dispersed over all the rest of the animal: no appearance of eyes: colour of the whole an uniform dull brown. It is supposed to be a native of South America*.



I CANNOT conclude the enumeration of the Serpent tribe without observing, that this branch of Natural History still requires much elucidation, and is, perhaps, of all others, the most liable to errors and uncertainties. The Linnæan characters of these animals, in the *Systema Naturæ*, are, from their extreme brevity, but ill calculated for general information, nor can it be surprising that they should now be considered as constituting little more than a mere series of memorandums relative to abdominal and subcaudal scales; while many of the most remarkable serpents in the works of Scheuchzer and Seba, seem to have been entirely neglected, apparently for no other reason than that the number of these parts could not be ascer-

* In the Museum Adolphi Friderici it is figured under the name of *C. tentaculata*, and appears to be confounded with that species.

tained: as if the external form and colours of the animals were of no importance in the specific character. On this subject the observations of Mr. Schneider appear to be perfectly just.

“ *Ingenia curiosorum primus acuit Linnæus ad investigandas corporum naturalium atque animalium notas; verum postquam accedente philosophia et zootomia pomoeria scientiæ naturalis multo latius promota fuerunt, raro curiosorum lectorum desiderio satisfaciunt breves amphibiorum notationes singulis speciebus in systemate Linnæano appositæ.*”

Mr. Schneider goes on to observe, that, unless a more ample mode of description be adopted, there is reason to apprehend that the authority of the Linnæan characters of the Amphibia, and of Serpents in particular, will become entirely obsolete.

“ *Aucto enim amphibiorum cognitorum numero, plures formæ notas cum pluribus speciebus communicari fuit necesse, quas ille, quibusdam proprias putaverat; plures etiam omisisse illum probabile est obscuras in exemplis junioribus vel vinaceo liquore nimis maceratis, vel contempsisse adeo velut inutiles, dum ipse nimis scutorum numero confidebat, quas deinde in adultis et recte cognitis exemplis eminentiores observavit curiosorum diligentia, vel assumere investigatas coegit dubitatio et criteriorum Linnæanorum cognita vanitas. Quod nisi fit, prope adest, ut verear, ne*

brevi omnis Linnæani Systematis auctoritas in enarranda serpentium historia naturali plane ut in metallorum historia factum est, evilescat. Compages quidem totius fabricæ jam omnes in postrema editione solutas esse video, atque ipsa fundamenta eo inclinare mihi videntur, ut ruina ædificii sit timenda.”



Head enlarged.

HELL-GRAMITE.

APPENDIX.

DUBIOUS AMPHIBIA,

OR

WHOSE REAL NATURE IS NOT COMPLETELY
UNDERSTOOD.

SIREN.

EEL-SHAPED SIREN.

Siren Lacertina. *S. bipes, corpore anguillæformi, branchiis ramosis.*

Two-footed Siren, with eel-shaped body, and ramified branchiæ.

Siren Lacertina. *Linn. Amoen. Acad.* 7. p. 311. *Syst. Nat.* vol. 1. pt. 2. *Addend.*

Muræna Siren. *Linn. Syst. Nat. Gmel.* p. 1136.

Amphibious Bipes, or Mud Inguana. *Ellis Phil. Trans.* vol. 56. p. 189.

Siren Lacertina. The Siren. *Nat. Misc. pl.* 61.

THIS species stands eminently distinguished in the list of animals by the ambiguity of its characters, which are such as to have induced the great Linnæus to institute it for a new order

of Amphibia, under the title of *Meantes**; an order, however, which does not stand among the rest of the Amphibia in the *Systema Naturæ*, but is mentioned in a note at the end of the second part of the first volume of that work.

The genus with which the Siren has evidently the greatest possible affinity, is the *Lacerta* or Lizard. It even very much resembles the larva, or first state of a *Lacerta*; and it is still doubtful whether it may not really be such: yet it has never been observed in any other state, having two feet only, without any appearance of a hind pair: the feet are also furnished with claws, whereas the larvæ of all the *Lacertæ* are observed to be without claws; or, in the Linnæan phrase, *digitis muticis*: the mouth has several rows of smallish teeth: the body is eel-shaped, but slightly flattened beneath; marked on the sides by several wrinkles, and slightly compressed towards the extremity of the tail, which is edged with a kind of soft skin or adipose fin, as it were: on each side the neck are three ramified branchial processes, resembling, on a larger scale, those belonging to the larvæ of water-newts, and at the base are the openings into the gills: the eyes are very small, and blue. The general colour of the animal is a deep or blackish brown, scattered over, especially on the sides, with numerous minute whitish

* The characters of this Order are thus given by Linnaeus, viz. *Branchiæ & Pulmones simul. Pedes brachiati, unguiculati*. The generic character stands thus, viz. *Corpus bipedum, caudatum, nudum. Pedes brachiati, unguiculati*.

specks. Its size nearly equals that of an Eel, being frequently found of the length of more than two feet. It is a native of North America, and more particularly of South Carolina, where it is not very uncommon in muddy and swampy places, living generally under water, but sometimes appearing on land. It has a kind of squeaking or singing voice, for which reason Linnæus distinguished it by the title of Siren.

This curious animal was first discovered and described by the ingenious Dr. Garden, who resided many years in Carolina, and who paid particular attention to the science of Natural History, which he enriched by many highly interesting observations. Dr. Garden communicated specimens of the Siren to Linnæus, with particulars relative to its history and manners. Linnæus, in his letter to Dr. Garden on this subject, declares, that nothing had ever exercised his thoughts so much, nor was there any thing he so much desired to know as the real nature of so extraordinary an animal.

The following particulars relative to the anatomy of the Syren are given by Mr. Hunter in the 56th volume of the Philosophical Transactions

“The tongue is broad and has very little motion: it has a bone similar to that in birds, turtles, &c. On the posterior and lateral parts of the mouth, are three openings on each side; these are similar to the slits of the gills in fish, but the partitions do not resemble gills on their outer edges, for they have not the comb-like structure. Above

and close to the extremity of each of these openings externally, so many processes arise; the anterior the smallest, the posterior the largest: their anterior and inferior edges and extremity are serrated, and formed into fimbriæ: these processes fold down and cover the slits externally, and would seem to answer the purposes of the comb-like part of the gill in fish.

“ At the root of the tongue, nearly as far back as these openings reach, the trachea begins, much in the same manner as in birds. It passes backwards above the heart, and there divides into two branches, one going to each lobe of the lungs. The lungs are two long bags, one on each side, which begin just behind the heart, and pass back through the whole length of the abdomen, nearly as far as the anus. They are largest in the middle, and honey-combed on the internal surface through their whole length. The heart consists of one auricle and one ventricle. What answers to the inferior vena cava, passes forwards above, but in a sulcus of the liver, and opens into a bag similar to the pericardium: this bag surrounds the heart and aorta, as the pericardium does in other animals: from this there is an opening into a vein which lies above, and upon the left of the auricle, which vein seems to receive blood from the lungs, gills, and head, is analogous to the superior vena cava, and opens into the auricle which is upon the left of the ventricle. The aorta goes out, passing for a little way in a loose spiral turn, then becomes strait, where it seems to be muscular: at this part

the branches go off, between which there is a rising within the area of the aorta, like a bird's tongue, with its tip turned towards the heart*.

“The liver is principally one lobe, pretty close to the heart at the fore part, and passes back on the right of the stomach and intestines; at its anterior extremity on the left side, there is a very short lobe ending abruptly. The gall-bladder lies in a fissure on the left side of the liver near its middle: there is no hepatic duct: the hepatocystic ducts, which seem to be three in number, enter the gall-bladder at its anterior end or fundus, and the cystic duct passes out from the posterior end of the gall-bladder, and terminates in the gut, about half an inch from the pylorus. The œsophagus, which is pretty large, passes back, and is continued into the stomach in the same line. The stomach at the posterior end bends a little to the right, where it terminates in the pylorus. The intestines pass back, making many turns: at the posterior end they become pretty

* This account of the *venæ cavæ* opening into the cavity of the pericardium may appear incredible; and it might be supposed, that in the natural state of the parts, there is a canal of communication going from one cava to the other, which being broken or nipt through in the act of catching or killing the animal, would give the appearance above described. I can only say, that the appearances were what have been described, in three different subjects which I have dissected; and in all of them the pericardium was full of coagulated blood. But, besides the smallness of the subjects, it may be observed that they had been long preserved in spirits, which made them more unfit for anatomical enquiries. They had been in my possession above seven years.

strait, forming what may be called the colon, or rectum, where they are a little larger, and run to the vent in a strait direction. At the beginning of this larger part of the intestinal tube there is no valvular structure. The spleen is a very small but long body : its anterior end is attached to the upper surface of the stomach, and it is continued back along the left side of the mesentery, to which it adheres. The pancreas is a small body, lying above the duodenum, and is attached also to the left side of the mesentery. The kidneys are situated in the upper and posterior part of the abdomen, having the rectum below and passing between them, as in the snake, &c. Below the rectum lies a long bag like a bladder ; it adheres all along to the inside of the abdominal muscles, and its mouth opens into the rectum ; but whether it is the bladder or not I cannot tell. On each side of the rectum, close to the lungs, there is a body, the posterior end of which rests upon the anterior end of the kidney ; but what they are I cannot pretend to determine."

The celebrated anatomist Camper seems to have deceived himself in a singular manner, in his examination of this extraordinary animal ; asserting that it was destitute of lungs ; and, in consequence, considering it as breathing by gills alone, in the manner of fish, regarded it as a species of *Muræna* or Eel, in which genus it is accordingly placed in the Gmelinian edition of the *Systema Naturæ* ; under the name of *Muræna Siren*. The opinion of Camper, however, is now allowed to

be erroneous; and the Siren is unquestionably most allied to the Lizard tribe; though it still remains doubtful whether it should be considered as a larva, or as an animal in its perfect or ultimate form.

The lightness with which the Count de Cepede passes over this interesting subject cannot be observed without surprise: I have surveyed, says he, with attention the figure of this animal in the Philosophical Transactions, as well as its description by Mr. Ellis, and have not a moment's hesitation in pronouncing it to be merely the larva of a Lacerta.

“ Nous avons examiné avec soin la figure et la description que M. Ellis en a données dans les Transactions Philosophiques; & nous n'avons pas douté un seul moment que cet animal, bien loin de constituer un ordre nouveau, ne fût une larve.”

How different this from the sober investigation and philosophical doubts of the great Linnæus, as well as from the patient enquiries of a Hunter and a Camper!

The celebrated Amphibiologist Schneider, after declaring his own opinion, that the Siren is really no other than the larva of some undiscovered Lizard, thus expresses his sentiments relative to the Count de Cepede's decision on the subject.

“ Factum igitur casu potius puto, ut suspicio Galli de Sirene lacertina Linnæi proposita, p. 611*,”

* Histoire Naturelle des Quadrupedes ovipares.

tam bene caderet, nec a scopo veritatis plane aberraret.”—*Schneid. Amph. fasc. 1. p. 41.*

It remains to be added, that the Siren, if thrown on the ground with any degree of violence, has been observed to break in two or three places; in this particular resembling the *Anguis fragilis* or Slow-Worm. It is also proper to observe, that no Lizard of which it may be supposed the Larva, has ever yet been discovered in those parts of Carolina where it is most frequent. The species to which it seems most allied is the *Lacerta Teguixin* of Linnæus, which is a native of South America.

ANGUINE SIREN.

Siren Anguina. *S. quadrupes, corpore anguillæformi, branchiis ramosis.*

Four-footed Siren with eel-shaped body, and ramified branchiæ. *Proteus anguinus. Laurenti Spec. Med. p. 37. t. 4. f. 3.*

Austrian Siren.

THIS singular animal is found in as singular a situation; being an inhabitant of the celebrated and romantic Lake called Lake Zirknitz*, about six German miles from Labac, in the Dutchy of Carniola in Austria. From this lake, which is somewhat more than a German mile in length, and half as much in breadth, the water regularly retires during the summer, by numerous subter-

* Lugea Palus of the ancients.



ANGUINE SIREN.

H. W. H. W.



aneous outlets or holes at the bottom ; leaving the ground dry, and fit for pasture, the cultivation of millet, &c. &c. as well as for various kinds of hunting and other amusements : but in the month of October it again returns, with great force ; springing out of the passages before mentioned from a vast depth till the Lake is completely filled. It is situated in a hollow or valley, surrounded by rocky and woody mountains, in which are vast caverns, and is principally supplied by eight rivulets running into it from the adjoining mountainous region. Of this Lake, with a probable theory of its phænomena, an ample description may be found in the sixteenth volume of the Philosophical Transactions.

The species of Siren at present to be described is extremely rare, and is found, in the spring, and towards the decline of summer, in some particular parts of the above-mentioned lake, and commonly measures, when full grown, from about ten to twelve or thirteen inches in length ; the largest specimens being near three quarters of an inch in diameter. It is entirely of a pale rose or flesh-colour, or even nearly white, except the three pair of ramified branchial fins on each side the neck, which are of a bright red or carmine-colour. Its general shape is that of an eel ; the body being cylindric, till towards the end of the tail, where it becomes flat, and is attenuated both above and below into a kind of fatty fin, scarce distinguishable from the rest of the tail : the skin is every

where smooth and even ; the head of a somewhat depressed form, with a lengthened, obtuse, and widish snout, and has no external eyes : the mouth is moderately wide, and furnished with a row of very minute teeth : the legs are about three quarters of an inch in length ; the fore legs being situated almost immediately behind the branchial fins, and the feet furnished with three toes, without any appearance of claws : the hind legs are situated at a great distance backwards, towards the commencement of the tail, and are of the same appearance with the fore legs, but the feet have only two toes, which, like those of the fore feet, are destitute of claws. The motions of the animal, when taken out of the water, are, in general, extremely slow and languid ; as is also the case when kept in a vessel of water ; but when in its native lake, it is sometimes observed to swim pretty briskly, waving its body in a serpentine direction, in the manner of a leech.

The Anguine Siren is well figured by Laurenti, who seems to have been its first describer, in his work entitled *Specimen Medicum, exhibens Synopsis Reptilium*, under the title of *Proteus Anguinus*.

With respect to its real nature, Zoologists are not yet agreed : some imagining it to be the Larva of some species of Lizard, whose gradations have not been fully ascertained, while others, with perhaps equal probability, suppose it a complete or perfect animal.

Its anatomy is amply detailed by Dr. Schreibers,

in the 91st volume of the Philosophical Transactions. The chief abbreviated particulars are the following:

The *Eyes* are most extremely small, subcutaneous, and situated on each side the base of the rostrum or upper jaw, just before the bulging or projecting parts.

The *Tongue* is large and fleshy; loose at the point, but attached by the root to the lower jaw.

The *Stomach* is very large, and of an almost coriaceous nature.

The *Liver* is extremely large and long; appearing, at first view, to fill the whole cavity of the abdomen, so as nearly to hide the other viscera.

The *Lungs* consist of a pair of very long tubular canals or processes, each terminating in an oblong simple bladder which is not divided internally into cellular spaces, but merely separated into two cavities by an intermediate membrane, a communication between the two sides of the bladder being left by means of a large semilunar opening at the upper end.

The *Bones* seem to be of the same conformation and nature as in the Salamander: no ribs or sternum; but bones in the tail.

This animal appears evidently to be of a predacious nature; feeding on the smaller kind of aquatic animals; since one which was kept alive for some days in a vessel of water, was observed to discharge from its stomach several small shells of the genus *Helix*, and in the stomach of one which Dr. Schreibers dissected were found the head and

bones of a small fish. Its voice is a strong hiss, louder than might be expected from the size of the animal.

Upon the whole, as Dr. Schreibers observes, there can be no doubt that this animal bears a great affinity to the Siren lacertina, before described, having both gills and lungs; and, therefore, leaves us in equal uncertainty as to its being a larva or a perfect animal. It is, however, remarkable that, notwithstanding the most careful researches, during many years, and the frequent fishing which takes place in the lakes and caverns of the neighbouring country, at all seasons of the year, no animal has hitherto been detected of which it can possibly be supposed the larva.

FISH-FORMED SIREN.

Siren Pisciformis. *S. fusco-ferruginea, nigro maculata, branchiis ramosissimis, palmis tetradactylis, plantis pentadactylis.*

Ferruginous-brown Siren, spotted with black, with finely ramified branchiæ, tetradactylous fore and pentadactylous hind feet.

Gyrinus Mexicanus. Mexican Tadpole. *Naturalist's Miscellany*, pl. 342, 343.

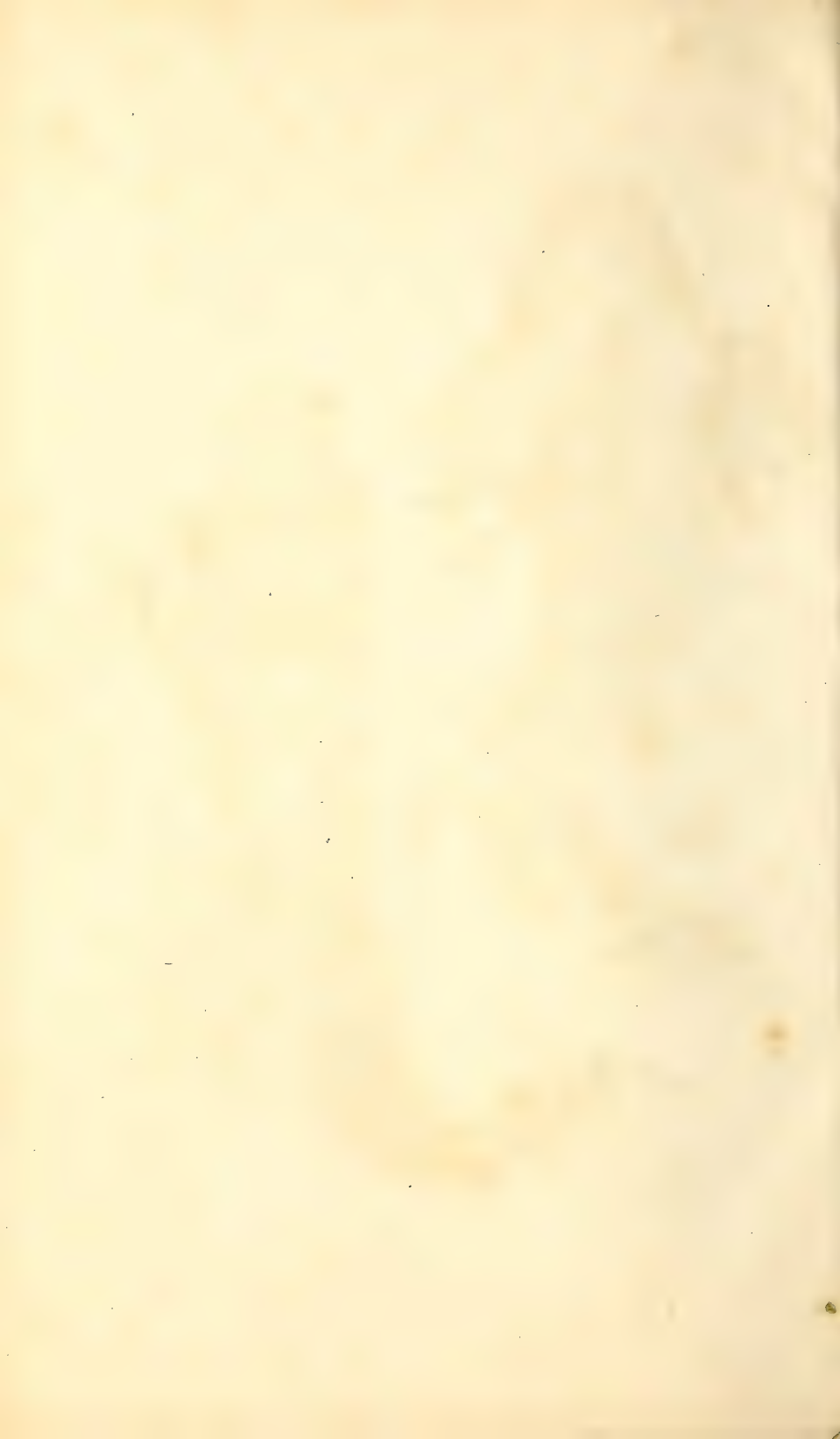
THIS animal was first described in the Naturalist's Miscellany, from a well-preserved specimen in the British Museum. I shall, therefore, here repeat my former description from the above-mentioned work.

The animal here represented in its natural size is supposed to be native of Mexico, and though



FISH-FORMED SIREN.

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perhaps no other than the Larva or Tadpole of some large American Lizard, seems a scarce less singular and curious animal than the *Siren*, so much and so long the subject of dubious speculation to Linnæus, and for which he at length instituted his additional order termed *Meantes*. In its general appearance it bears some resemblance to the larva of the *Rana paradoxa*, but is furnished with gills, opening externally in the manner of a fish: the openings are very large, and the operculum or external flap is continued from the sides of the head across the throat beneath, so as completely to insulate the head from the breast: the gills themselves consist of four semicircular bony or cartilaginous arches, which are denticulated or serrated on their internal or concave part, like those of fishes: on the opercula or external flaps are situated three very large and elegant branchial fins or ramified parts, divided and subdivided into a vast number of slender or capillary processes. In these particulars it resembles the *Siren lacertina*, except that in that animal the external opening to the gills is very small: the mouth is furnished in front with a row of extremely minute teeth: the tongue is large, smooth, and rounded at the tip: the rictus or gape, when the mouth is closed appears considerably wider than it really is; owing to a lateral sulcus proceeding from each corner to some distance: the feet are entirely destitute of webs, and the toes are furnished with weak-

ish claws: the fore feet have four, and the hind feet five toes. Exclusive of the general colour of the animal, the whole skin when minutely examined, appears to be scattered over with very minute white specks, resembling those on the surface of the *Siren lacertina*. The sides of the body are marked by several strong rugæ or furrows, and an impressed lateral line or sulcus is continued from the gills to the tail*.

It may be added that the animal figured in the 4th volume of the American Philosophical Transactions and described by Mr. de Beauvois as a new species of *Siren*, seems much allied to the present, and may even be the same species, since it appears to agree in the leading particulars: the specimen, however, seems not to have been in the highest state of preservation, since no mention is made of any spots: its size is considerably smaller than that of the present ani-

* A species nearly allied to this is mentioned by Mr. Schneider, who examined it in the museum of Professor Hellwig at Brunswick. It was taken in the Lake Champlain, in North America, where it is said to be dreaded by the fishermen, who consider it as a poisonous animal. Its length is more than eight inches, and its diameter nearly an inch: it is soft, spongy, and porous, and is marked on each side by three rows of round black spots: tail ancipital, compressed, and spotted; lower edge strait; upper curved; tip roundish or cylindric. Head broad, flat; eyes small; teeth in both jaws conical obtuse, and rather long: tongue broad; mouth wide; lips like those of a fish: on each side the neck three branchial fins: feet four; distant; tetradactylous, and without claws.—*Schneid. Hist. Amph. fasc. 1. p. 50.*

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mal; and the toes are represented as terminating bluntly. Mr. De Beauvois thinks, that, upon the whole, the Linnæan order *Meantes* should be preserved, until more detailed and enlarged observations on these animals shall have completely elucidated their real nature.

END OF VOLUME III.

